STORMWATER MANAGEMENT STUDY
FOR
PARADISE VALLEY CLUB

GROVE STREET
FRAMINGHAM, MASSACHUSETTS

Prepared for:

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Project 13005
November 2015

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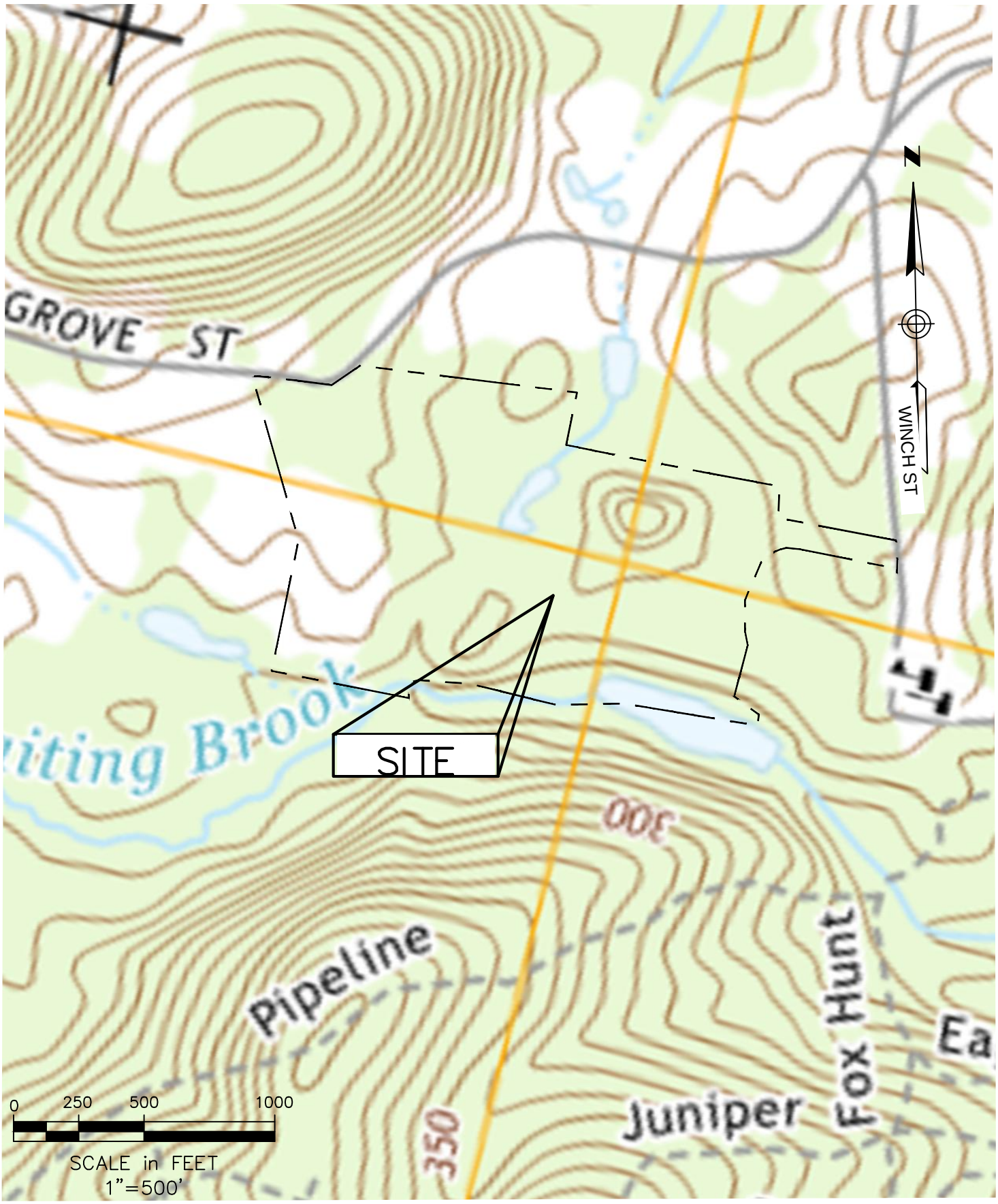

Paradise Valley Club

Grove Street
Framingham, Massachusetts

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SITE LOCATION USGS MAP

DRAWN BY:	CHECKED BY:	FIGURE NO.
SPM	SPM	1
SCALE: AS NOTED	DATE: 11/2/15	

1.0 INTRODUCTION

Oak Consulting Group has prepared the following Stormwater Management Study for the proposed Paradise Valley Club development. The objective of this study was to engineer a drainage design using Best Management Practices (BMPs) that meet the Stormwater Management Standards set forth in the Massachusetts Department of Environmental Protection's (MA DEP's) Stormwater Policy and standard engineering practice.

The Project Area is located on a residential property also historically used as a horse farm, with access from Grove Street. The site is bounded by Grove Street to the north, Baiting Brook to the west, Winch Street to the south, and residential property to the east. The project consists of an Open Space Preservation Development with a new residential condominium with associated drives, utility, landscape, and drainage improvements.

The total area of disturbance is approximately 14.0 acres. Portions of the proposed work area are within buffers to wetlands resource areas subject to protection under the Wetlands Protection Act and the local bylaw. The project has been designed to minimize and mitigate disturbance in these buffers and to help protect the abutting resource areas.

1.1 Existing Conditions

The site of the proposed project is a +/-46.8-acre parcel situated between Grove Street and Winch Street on a residential property historically used as a horse farm. The site has a man-made pond near the center of the site and bordering vegetated wetlands in the southern portion of the site and along the eastern boundary adjacent to Baiting Brook. Portions of the site are subject to protection by the 200-foot Riverfront Area buffer to Baiting Brook.

The northern portions of the site are developed with a residential dwelling, several accessory use buildings, supporting driveways, parking areas and other miscellaneous site improvements. A majority of remainder of the site is in a natural state with several grassed pasture areas and a gravel road cutting through the site from north to south. The site is sloped generally to the southeast and southwest with a hydraulic break line bisecting the site. Areas which are not developed with impervious surfaces are generally comprised of grassed areas and woods.

The site characterized by two watershed areas. Stormwater from the western portion of the site (Subcatchment 1 and 4) flows to the southwest and is collected in the Baiting Brook and an existing pond to the south. Stormwater from the eastern portion of the site (Subcatchments 2 and 3) flows to the southeast and is collected by the man-made pond on the site and wetlands along the eastern property boundary.

1.2 Site Geology and Hydrogeology

The NRCS has documented the site as having a wide range of soils types from Merrimac Fine Sandy Loam with a Hydrologic Soil Group (HSG) A designation to Whitman Fine Sandy Loam and Hollis-Rock outcrop with a HSG D designation. The NRCS delineation of the soils was digitized onto the site survey so the soil group for each ground coverage area within a subcatchment will correspond with the published soils data and is shown on the enclosed sheets watershed plans. A copy of the NCRS soils map and HSG's is enclosed as Attachment E.

1.3 Proposed Conditions

The project proposes construction of 39 single family homes along with approximately 2,300 linear feet of road, new driveways, utilities and drainage infrastructure. The drainage system has been designed to manage stormwater and mitigate the impacts of development to runoff from the site.

The proposed drainage design uses both closed drainage and LID style country drainage to convey stormwater. To mitigate increases in runoff, site drainage will be detained and infiltrated through surface basins as well as subsurface systems. The runoff from the proposed houses will be directed to subsurface infiltration chambers which have been size to retain up to the 100-year storm event. Infiltration of stormwater will effectively mimic the pre-development drainage condition by helping to control the rate and volume of runoff from the site and recharging runoff generated by new impervious areas to the ground.

Stormwater treatment is provided primarily through the use pre-treatment devises such as deep sump catch basins and grassed swales prior to directing runoff to infiltration basins spread throughout the project area. The infiltration areas are shallow (1-3' deep) grassed basins with a stone infiltration trench or drywell to help promote infiltration. These stormwater treatment areas are designed to capture, retain and treat at least the prescribed treatment volume of a half inch of runoff from impervious areas, known as the "first flush."

1.4 Methodology

Drainage conditions of the project area were analyzed in both the pre-development and post-development condition using the computer program HydroCAD. This program utilized the SCS TR-20 drainage model to generate estimated peak rates of runoff for the Subcatchment areas modeled. The pre-development analysis divided the site into four sub-catchments based on the locations of drainage discharges from the site. In the post-development analysis these subcatchment areas were broken down to several smaller subcatchment areas to analyze the proposed BMP's for the project, while keeping the same points of discharge used in the Pre-development analysis. The Pre-Development Subcatchment Plans and Post-Development Subcatchment Plans depicting the sub-areas analyzed can be found in Appendices A and B, respectively.

2.0 STORMWATER MANAGEMENT STANDARDS

The plans included with this drainage study present the existing and proposed storm drain systems and erosion control measures proposed for the project. The stormwater BMPs were designed to meet and exceed the performance standards of the Stormwater Policy. The measures taken to address each of the standards are presented below.

2.1 No New Untreated Discharges (Standard 1)

The proposed project will not result in new untreated discharges. Runoff from the proposed project area and new impervious areas will be captured, treated to remove total suspended solids (TSS), and infiltrated on site. Treated runoff not infiltrated on site will be discharged at a rate not to exceed and at approximately the same location as the pre-development condition.

2.2 Peak Rate Attenuation (Standard 2)

The Post-development rate and volume of runoff from the site will be less than the Pre-development Conditions. HydroCAD stormwater calculations for the 25- and 100-year design storms are provided in Appendices A and B, and the 2- 10- 25-, and 100-year storm events are summarized in the table below. The existing and proposed drainage conditions were evaluated at the point of discharge to the pond.

Table 2.2.1 - Rate of Discharge from Site

	Peak Rate of Runoff for 2-Year Storm Event (3.1") Pre/**Post**	**Peak Rate of Runoff for 10-Year Storm Event (4.6")** Pre/**Post**	**Peak Rate of Runoff for 25-Year Storm Event (5.5")** Pre/**Post**	**Peak Rate of Runoff for 100-Year Storm Event (6.7")** Pre/**Post**
West	4.19/**3.70** cfs	16.70/**14.99** cfs	27.18/**24.05** cfs	42.96/**37.78** cfs
East	6.65/**6.21** cfs	13.17/**12.56** cfs	17.66/**16.97** cfs	63.47/**51.25** cfs
Total Site	8.39/**1.48** cfs	26.35/**20.75** cfs	40.42/**31.76** cfs	97.30/**87.73** cfs
Change	**-18%**	**-21%**	**-21%**	**-10%**

Table 2.2.2 – Volume of Runoff from Site

	Volume of Runoff for 2-Year Storm Event (3.1") Pre/**Post**	**Volume of Runoff for 10-Year Storm Event (4.6")** Pre/**Post**	**Volume of Runoff for 25-Year Storm Event (5.5")** Pre/**Post**	**Volume of Runoff for 100-Year Storm Event (6.7")** Pre/**Post**
West	0.618/**0.645** acft	1.737/**1.744** acft	2.646/**2.633** acft	4.022/**3.699** acft
East	0.504/**0.444** acft	1.953/**1.459** acft	3.182/**2.625** acft	4.940/**4.307** acft
Total	1.122/**1.089** acft	3.69/**3.203** acft	5.827/**5.257** acft	8.962/**8.273** acft
Change	**-3%**	**-13%**	**-10%**	**-8%**

As shown above, there will be a net decrease in the rate and volume of runoff to from the site in the post-development condition.

2.3 Groundwater Recharge (Standard 3)

The performance standards require an approximate restoration of groundwater recharge in post-development conditions. Soil data was obtained from the NRC Web Soil Survey. On-site soils within the development area were classified as HSG A, HSG B and HSG D soils. Below is a calculation of the required recharge volume for the new site impervious area in each of these soil groups.

Volume required in HSG A Soils
13,708 sf x (0.6 in) / (12 in/ft) = 685.4 cubic feet

Volume required in HSG B Soils
55,215 sf x (0.35 in) / (12 in/ft) = 1,610.4 cubic feet

Volume required in HSG D Soils
31,441 sf x (0.1 in) / (12 in/ft) = 262.0 cubic feet

Total recharge volume required = 2,557.8 cubic feet

The project will use surface and subsurface infiltration basins for stormwater treatment and groundwater recharge. These basins were sized to capture and hold greater than the required stormwater recharge volume for the site. The total recharge volume for the proposed drainage system was calculated to be 14,558.50 cf, exceeding the required volume of 2,557.8 cf.

Additional proposed impervious areas will consist of the proposed houses. Below is a calculation of the required recharge volume for the impervious area related to the proposed houses in each of the soil groups.

Volume required in HSG A Soils
13,938 sf x (0.6 in) / (12 in/ft) = 696.9 cubic feet

Volume required in HSG B Soils
47,094 sf x (0.35 in) / (12 in/ft) = 1,373.6 cubic feet

Volume required in HSG D Soils
20,868 sf x (0.1 in) / (12 in/ft) = 173.9 cubic feet

Total additional recharge volume required = 2,244.4 cubic feet

Each of the 39 proposed houses will be connected to a subsurface infiltration system consisting of 8 HDPE chambers embedded in stone. Each of these systems will have a total storage capacity of 741 cf. The recharge volume for the chamber systems was calculated to be 28,899 cf (=39x741 cf), exceeding the additional required volume of 2,244.4 cf.

2.4 Water Quality (Standard 4)

Runoff generated by the site will be treated to remove at least 80 percent of the total annual load of Total Suspended Solids (TSS). Runoff from the new driveway areas will be directed to deep sump

catchbasins or grassed swales to pretreat runoff prior to discharging to infiltration basins. Stormwater from the basins and the closed drainage system will be routed through a stormwater treatment unit then discharged to a natural filter strip at least 100 feet long prior to discharge from the site.

2.5 Land Use with Higher Potential Pollutant Loads (LUHPPLs) (Standard 5)

The proposed project involves the construction of a residential development. This use is not associated with higher potential pollutant loads.

2.6 Critical Areas (Standard 6)

The site does not contain critical environmental resource areas.

2.7 Redevelopments and Other Projects Subject to the Standards Only to the Maximum Extent Practicable (Standard 7)

A "redevelopment" project is defined in the MA DEP Stormwater Policy as: "Development, rehabilitation, expansion, and phased projects on previously developed sites, provided the redevelopment results in no net increase in impervious area."

The proposed project does not meet this definition of a redevelopment project and the proposed stormwater management system is in full compliance with stormwater regulations for new development projects.

2.8 Construction-Period Pollution Prevention and Erosion and Sedimentation Control (Standard 8)

Below is a summary of the erosion and sediment control procedures. Additional detail can be found on Sheet C-500, Erosion Control Notes, and details provided on the project plans.

Land-disturbing activities proposed under this project will include the items listed in, and be sequenced according to, the following preliminary construction schedule:

1. Installation of temporary erosion controls (hay bales, sedimentation barriers, and catchbasin inlet protection).

2. Clearing and grubbing. Stockpile topsoil.

3. Excavation, grading, construction of drainage system, and stabilization.

4. Construction of roadways and utilities.

5. Construction of buildings, landscaping, and final stabilization.

6. Removal of temporary erosion controls and any trapped sediment.

Erosion/sediment controls will be in place throughout the site during all phases of construction. All existing catchbasins in the project area will have a silt basket installed under the grate. The Contractor shall be responsible for checking all of the erosion/sediment control measures periodically and after every storm. The Contractor shall repair, replace, and maintain all erosion/sediment control measures throughout construction until all disturbed areas have been stabilized. Efforts will be made to

establish vegetative cover over all disturbed areas as soon as possible after the work in that area is complete. All disturbed areas will be treated with a 4-inch depth of loam and seed.

The occurrence of an extended shutdown during the construction phase of this project is not anticipated and is unlikely. Should unexpected events dictate, measures will be taken to stabilize the disturbed areas of the site as a last construction activity before the start of an extended shutdown. These measures will include careful planning of the immediate construction schedule so that further land disturbance is kept to a minimum and the re-stabilization of existing disturbed areas is maximized prior to the extended shutdown. Other measures will include the reinforcement and repair of all erosion/sediment controls in place at the time of the extended shutdown.

2.9 Operation and Maintenance Plan (Standard 9)

See Appendix D.

2.10 Prohibition of Illicit Discharges

Illicit discharges are prohibited.

APPENDIX A

Pre-Development Drainage Calculations

Paradise Valley Club
Grove Street
Framingham, Massachusetts

EXISTING CONDITIONS NOTES:

1. VERTICAL DATUM REFERS TO NGVD 1929.
2. THE WETLAND BOUNDARIES SHOWN HERON ARE BASED WETLANDS FLAGS SURVEY LOCATED BY GUERRIERE & HANLON AND PROVIDED TO OCG IN THE SPRING OF 2015.
3. EXISTING CONDITIONS AND TOPOGRAPHIC INFORMATION SHOWN HERON WAS PROVIDED BY BENCHMARK ENGINEERING.

Site:

PARADISE VALLEY CLUB

GROVE AND WINCH STREET
FRAMINGHAM, MASSACHUSETTS

Prepared for:

BENCHMARK ENGINEERING CORP.
120 QUARRY DRIVE
MILFORD, MASSACHUSETTS 01757

LEGEND

- SUBCATMENT BOUNDARY
- DRAINAGE FLOW PATH
- (4) SUBCATCHMENT NUMBER
- NRC SOIL BOUNDARY
- "B" NRC HRDROLOGIC SOIL GROUP

SEAN P MALONE
CIVIL
REGISTERED PROFESSIONAL ENGINEER
11-2-15

0 40 80 160
SCALE in FEET
1"=80'

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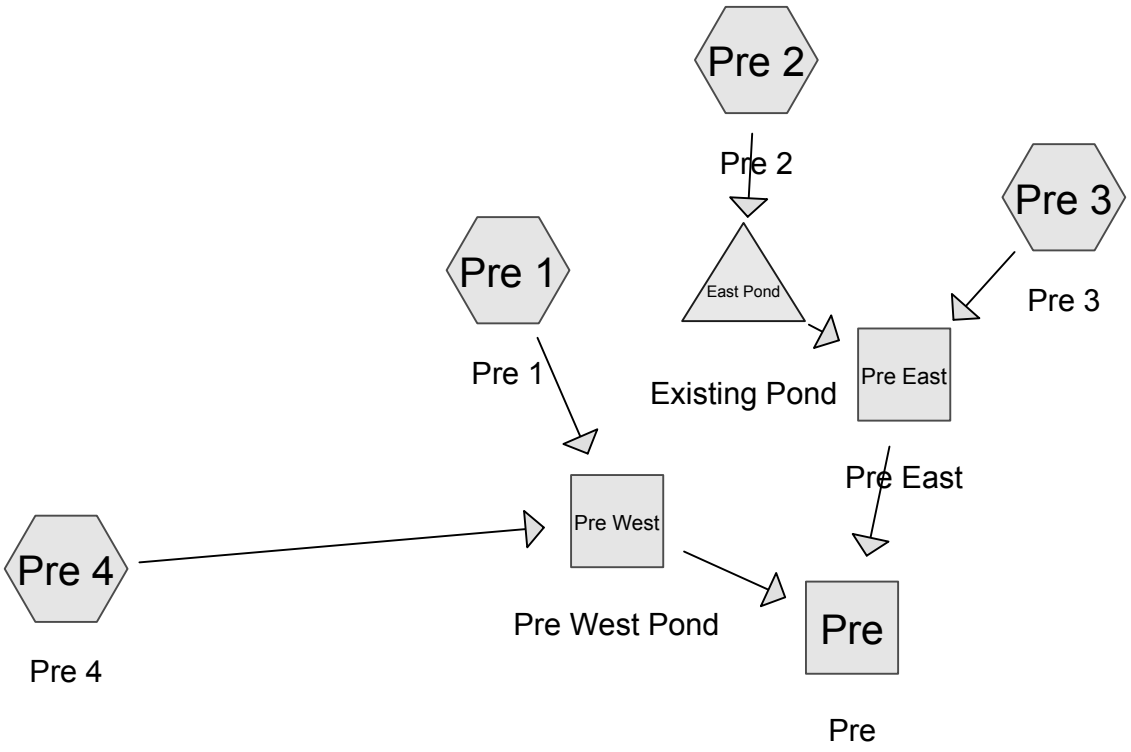
PRE-DEVELOPMENT SUBCATCHMENT PLAN

No.	Revision/Issue	Date

Design by: SPM	Checked by: PFA
Drawn by: SPM	Approved by: PFA
Project: 13005	Date: November 2, 2015

Sheet: DR-100



Subcat Reach Pond Link

Routing Diagram for 13005 PRE-POST OSPD

Prepared by {enter your company name here}, Printed 10/30/2015

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment Pre 1: Pre 1 Runoff Area=991,957 sf 7.10% Impervious Runoff Depth>0.32"
Flow Length=685' Slope=0.0620 '/' Tc=16.3 min UI Adjusted CN=59 Runoff=4.14 cfs 0.609 af

Subcatchment Pre 2: Pre 2 Runoff Area=768,117 sf 12.39% Impervious Runoff Depth>0.70"
Flow Length=1,202' Slope=0.0640 '/' Tc=18.9 min UI Adjusted CN=69 Runoff=9.64 cfs 1.025 af

Subcatchment Pre 3: Pre 3 Runoff Area=249,979 sf 1.07% Impervious Runoff Depth>1.05"
Flow Length=621' Slope=0.0780 '/' Tc=8.8 min CN=76 Runoff=6.65 cfs 0.504 af

Subcatchment Pre 4: Pre 4 Runoff Area=11,316 sf 17.44% Impervious Runoff Depth>0.39"
Flow Length=103' Slope=0.0530 '/' Tc=6.0 min UI Adjusted CN=61 Runoff=0.08 cfs 0.008 af

Reach Pre: Pre Inflow=8.39 cfs 1.122 af
Outflow=8.39 cfs 1.122 af

Reach Pre East: Pre East Inflow=6.65 cfs 0.504 af
Outflow=6.65 cfs 0.504 af

Reach Pre West: Pre West Pond Inflow=4.19 cfs 0.618 af
Outflow=4.19 cfs 0.618 af

Pond East Pond: Existing Pond Peak Elev=263.12' Storage=44,593 cf Inflow=9.64 cfs 1.025 af
Outflow=0.00 cfs 0.000 af

Total Runoff Area = 46.404 ac Runoff Volume = 2.146 af Average Runoff Depth = 0.56"
91.58% Pervious = 42.495 ac 8.42% Impervious = 3.909 ac

Summary for Subcatchment Pre 1: Pre 1

Runoff = 4.14 cfs @ 12.39 hrs, Volume= 0.609 af, Depth> 0.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.20"

Area (sf)	CN	Adj	Description
64,222	98		Unconnected pavement, HSG B
6,212	98		Unconnected pavement, HSG C
0	98		Unconnected pavement, HSG D
15,583	96		Gravel surface, HSG B
0	96		Gravel surface, HSG D
115,244	32		Woods/grass comb., Good, HSG A
52,781	39		>75% Grass cover, Good, HSG A
334,157	58		Woods/grass comb., Good, HSG B
284,524	61		>75% Grass cover, Good, HSG B
61,008	72		Woods/grass comb., Good, HSG C
16,255	74		>75% Grass cover, Good, HSG C
41,971	79		Woods/grass comb., Good, HSG D
0	80		>75% Grass cover, Good, HSG D
991,957	60	59	Weighted Average, UI Adjusted
921,523	57	57	92.90% Pervious Area
70,434	98	98	7.10% Impervious Area
70,434			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.3	685	0.0620	0.70		**Lag/CN Method, Pre 1**

Summary for Subcatchment Pre 2: Pre 2

Runoff = 9.64 cfs @ 12.30 hrs, Volume= 1.025 af, Depth> 0.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.20"

Area (sf)	CN	Adj	Description
63,792	98		Unconnected pavement, HSG B
0	98		Unconnected pavement, HSG C
31,406	98		Unconnected pavement, HSG D
4,316	96		Gravel surface, HSG B
0	96		Gravel surface, HSG D
930	32		Woods/grass comb., Good, HSG A
0	39		>75% Grass cover, Good, HSG A
236,613	58		Woods/grass comb., Good, HSG B
188,779	61		>75% Grass cover, Good, HSG B
0	72		Woods/grass comb., Good, HSG C
0	74		>75% Grass cover, Good, HSG C
167,331	79		Woods/grass comb., Good, HSG D
74,950	80		>75% Grass cover, Good, HSG D
768,117	71	69	Weighted Average, UI Adjusted
672,919	67	67	87.61% Pervious Area
95,198	98	98	12.39% Impervious Area
95,198			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.9	1,202	0.0640	1.06		**Lag/CN Method, Pre 2**

Summary for Subcatchment Pre 3: Pre 3

Runoff = 6.65 cfs @ 12.14 hrs, Volume= 0.504 af, Depth> 1.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.20"

Area (sf)	CN	Description
2,674	98	Unconnected pavement, HSG B
0	98	Unconnected pavement, HSG C
0	98	Unconnected pavement, HSG D
596	96	Gravel surface, HSG B
10,405	96	Gravel surface, HSG D
0	32	Woods/grass comb., Good, HSG A
0	39	>75% Grass cover, Good, HSG A
44,436	58	Woods/grass comb., Good, HSG B
0	61	>75% Grass cover, Good, HSG B
0	72	Woods/grass comb., Good, HSG C
0	74	>75% Grass cover, Good, HSG C
187,649	79	Woods/grass comb., Good, HSG D
4,219	80	>75% Grass cover, Good, HSG D
249,979	76	Weighted Average
247,305	76	98.93% Pervious Area
2,674	98	1.07% Impervious Area
2,674		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	621	0.0780	1.18		**Lag/CN Method, Pre 3**

Summary for Subcatchment Pre 4: Pre 4

Runoff = 0.08 cfs @ 12.13 hrs, Volume= 0.008 af, Depth> 0.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.20"

Area (sf)	CN	Adj	Description
1,974	98		Unconnected pavement, HSG B
0	98		Unconnected pavement, HSG C
0	98		Unconnected pavement, HSG D
0	96		Gravel surface, HSG B
0	96		Gravel surface, HSG D
0	32		Woods/grass comb., Good, HSG A
0	39		>75% Grass cover, Good, HSG A
9,342	58		Woods/grass comb., Good, HSG B
0	61		>75% Grass cover, Good, HSG B
0	72		Woods/grass comb., Good, HSG C
0	74		>75% Grass cover, Good, HSG C
0	79		Woods/grass comb., Good, HSG D
0	80		>75% Grass cover, Good, HSG D
11,316	65	61	Weighted Average, UI Adjusted
9,342	58	58	82.56% Pervious Area
1,974	98	98	17.44% Impervious Area
1,974			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.4	103	0.0530	0.50		**Lag/CN Method, Pre 4**
3.4	103	Total, Increased to minimum Tc = 6.0 min			

Summary for Reach Pre: Pre

Inflow Area = 46.404 ac, 8.42% Impervious, Inflow Depth > 0.29" for 2-YR event
Inflow = 8.39 cfs @ 12.20 hrs, Volume= 1.122 af
Outflow = 8.39 cfs @ 12.20 hrs, Volume= 1.122 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Reach Pre East: Pre East

Inflow Area = 23.372 ac, 9.61% Impervious, Inflow Depth > 0.26" for 2-YR event
Inflow = 6.65 cfs @ 12.14 hrs, Volume= 0.504 af
Outflow = 6.65 cfs @ 12.14 hrs, Volume= 0.504 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Reach Pre West: Pre West Pond

Inflow Area = 23.032 ac, 7.22% Impervious, Inflow Depth > 0.32" for 2-YR event
Inflow = 4.19 cfs @ 12.39 hrs, Volume= 0.618 af
Outflow = 4.19 cfs @ 12.39 hrs, Volume= 0.618 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Pond East Pond: Existing Pond

Inflow Area = 17.634 ac, 12.39% Impervious, Inflow Depth > 0.70" for 2-YR event
Inflow = 9.64 cfs @ 12.30 hrs, Volume= 1.025 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 263.12' @ 20.00 hrs Surf.Area= 48,405 sf Storage= 44,593 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	262.00'	64,223 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
262.00	31,406	0	0
263.50	54,224	64,223	64,223

Device	Routing	Invert	Outlet Devices
#1	Primary	263.30'	**70.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=262.00' TW=0.00' (Dynamic Tailwater)
↑**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentPre 1: Pre 1 Runoff Area=991,957 sf 7.10% Impervious Runoff Depth>0.90"
Flow Length=685' Slope=0.0620 '/' Tc=16.3 min UI Adjusted CN=59 Runoff=16.52 cfs 1.715 af

SubcatchmentPre 2: Pre 2 Runoff Area=768,117 sf 12.39% Impervious Runoff Depth>1.52"
Flow Length=1,202' Slope=0.0640 '/' Tc=18.9 min UI Adjusted CN=69 Runoff=22.81 cfs 2.239 af

SubcatchmentPre 3: Pre 3 Runoff Area=249,979 sf 1.07% Impervious Runoff Depth>2.05"
Flow Length=621' Slope=0.0780 '/' Tc=8.8 min CN=76 Runoff=13.17 cfs 0.979 af

SubcatchmentPre 4: Pre 4 Runoff Area=11,316 sf 17.44% Impervious Runoff Depth>1.02"
Flow Length=103' Slope=0.0530 '/' Tc=6.0 min UI Adjusted CN=61 Runoff=0.30 cfs 0.022 af

Reach Pre: Pre Inflow=26.35 cfs 3.690 af
Outflow=26.35 cfs 3.690 af

Reach Pre East: Pre East Inflow=13.17 cfs 1.953 af
Outflow=13.17 cfs 1.953 af

Reach Pre West: Pre West Pond Inflow=16.70 cfs 1.737 af
Outflow=16.70 cfs 1.737 af

Pond East Pond: Existing Pond Peak Elev=263.37' Storage=57,488 cf Inflow=22.81 cfs 2.239 af
Outflow=3.27 cfs 0.974 af

Total Runoff Area = 46.404 ac Runoff Volume = 4.956 af Average Runoff Depth = 1.28"
91.58% Pervious = 42.495 ac 8.42% Impervious = 3.909 ac

Summary for Subcatchment Pre 1: Pre 1

Runoff = 16.52 cfs @ 12.27 hrs, Volume= 1.715 af, Depth> 0.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.60"

Area (sf)	CN	Adj	Description
64,222	98		Unconnected pavement, HSG B
6,212	98		Unconnected pavement, HSG C
0	98		Unconnected pavement, HSG D
15,583	96		Gravel surface, HSG B
0	96		Gravel surface, HSG D
115,244	32		Woods/grass comb., Good, HSG A
52,781	39		>75% Grass cover, Good, HSG A
334,157	58		Woods/grass comb., Good, HSG B
284,524	61		>75% Grass cover, Good, HSG B
61,008	72		Woods/grass comb., Good, HSG C
16,255	74		>75% Grass cover, Good, HSG C
41,971	79		Woods/grass comb., Good, HSG D
0	80		>75% Grass cover, Good, HSG D
991,957	60	59	Weighted Average, UI Adjusted
921,523	57	57	92.90% Pervious Area
70,434	98	98	7.10% Impervious Area
70,434			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.3	685	0.0620	0.70		**Lag/CN Method, Pre 1**

Summary for Subcatchment Pre 2: Pre 2

Runoff = 22.81 cfs @ 12.28 hrs, Volume= 2.239 af, Depth> 1.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.60"

Area (sf)	CN	Adj	Description
63,792	98		Unconnected pavement, HSG B
0	98		Unconnected pavement, HSG C
31,406	98		Unconnected pavement, HSG D
4,316	96		Gravel surface, HSG B
0	96		Gravel surface, HSG D
930	32		Woods/grass comb., Good, HSG A
0	39		>75% Grass cover, Good, HSG A
236,613	58		Woods/grass comb., Good, HSG B
188,779	61		>75% Grass cover, Good, HSG B
0	72		Woods/grass comb., Good, HSG C
0	74		>75% Grass cover, Good, HSG C
167,331	79		Woods/grass comb., Good, HSG D
74,950	80		>75% Grass cover, Good, HSG D
768,117	71	69	Weighted Average, UI Adjusted
672,919	67	67	87.61% Pervious Area
95,198	98	98	12.39% Impervious Area
95,198			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.9	1,202	0.0640	1.06		**Lag/CN Method, Pre 2**

Summary for Subcatchment Pre 3: Pre 3

Runoff = 13.17 cfs @ 12.13 hrs, Volume= 0.979 af, Depth> 2.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.60"

Area (sf)	CN	Description
2,674	98	Unconnected pavement, HSG B
0	98	Unconnected pavement, HSG C
0	98	Unconnected pavement, HSG D
596	96	Gravel surface, HSG B
10,405	96	Gravel surface, HSG D
0	32	Woods/grass comb., Good, HSG A
0	39	>75% Grass cover, Good, HSG A
44,436	58	Woods/grass comb., Good, HSG B
0	61	>75% Grass cover, Good, HSG B
0	72	Woods/grass comb., Good, HSG C
0	74	>75% Grass cover, Good, HSG C
187,649	79	Woods/grass comb., Good, HSG D
4,219	80	>75% Grass cover, Good, HSG D
249,979	76	Weighted Average
247,305	76	98.93% Pervious Area
2,674	98	1.07% Impervious Area
2,674		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	621	0.0780	1.18		**Lag/CN Method, Pre 3**

Summary for Subcatchment Pre 4: Pre 4

Runoff = 0.30 cfs @ 12.11 hrs, Volume= 0.022 af, Depth> 1.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.60"

Area (sf)	CN	Adj	Description
1,974	98		Unconnected pavement, HSG B
0	98		Unconnected pavement, HSG C
0	98		Unconnected pavement, HSG D
0	96		Gravel surface, HSG B
0	96		Gravel surface, HSG D
0	32		Woods/grass comb., Good, HSG A
0	39		>75% Grass cover, Good, HSG A
9,342	58		Woods/grass comb., Good, HSG B
0	61		>75% Grass cover, Good, HSG B
0	72		Woods/grass comb., Good, HSG C
0	74		>75% Grass cover, Good, HSG C
0	79		Woods/grass comb., Good, HSG D
0	80		>75% Grass cover, Good, HSG D
11,316	65	61	Weighted Average, UI Adjusted
9,342	58	58	82.56% Pervious Area
1,974	98	98	17.44% Impervious Area
1,974			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.4	103	0.0530	0.50		**Lag/CN Method, Pre 4**
3.4	103	Total, Increased to minimum Tc = 6.0 min			

Summary for Reach Pre: Pre

Inflow Area = 46.404 ac, 8.42% Impervious, Inflow Depth > 0.95" for 10-YR event
Inflow = 26.35 cfs @ 12.20 hrs, Volume= 3.690 af
Outflow = 26.35 cfs @ 12.20 hrs, Volume= 3.690 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Reach Pre East: Pre East

Inflow Area = 23.372 ac, 9.61% Impervious, Inflow Depth > 1.00" for 10-YR event
Inflow = 13.17 cfs @ 12.13 hrs, Volume= 1.953 af
Outflow = 13.17 cfs @ 12.13 hrs, Volume= 1.953 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Reach Pre West: Pre West Pond

Inflow Area = 23.032 ac, 7.22% Impervious, Inflow Depth > 0.91" for 10-YR event
Inflow = 16.70 cfs @ 12.27 hrs, Volume= 1.737 af
Outflow = 16.70 cfs @ 12.27 hrs, Volume= 1.737 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Pond East Pond: Existing Pond

Inflow Area = 17.634 ac, 12.39% Impervious, Inflow Depth > 1.52" for 10-YR event
Inflow = 22.81 cfs @ 12.28 hrs, Volume= 2.239 af
Outflow = 3.27 cfs @ 13.59 hrs, Volume= 0.974 af, Atten= 86%, Lag= 78.8 min
Primary = 3.27 cfs @ 13.59 hrs, Volume= 0.974 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 263.37' @ 13.59 hrs Surf.Area= 52,301 sf Storage= 57,488 cf

Plug-Flow detention time= 206.4 min calculated for 0.974 af (43% of inflow)
Center-of-Mass det. time= 116.4 min (939.3 - 822.9)

Volume	Invert	Avail.Storage	Storage Description
#1	262.00'	64,223 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
262.00	31,406	0	0
263.50	54,224	64,223	64,223

Device	Routing	Invert	Outlet Devices
#1	Primary	263.30'	**70.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=3.27 cfs @ 13.59 hrs HW=263.37' TW=0.00' (Dynamic Tailwater)
↑**1=Broad-Crested Rectangular Weir** (Weir Controls 3.27 cfs @ 0.63 fps)

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment Pre 1: Pre 1 Runoff Area=991,957 sf 7.10% Impervious Runoff Depth>1.38"
Flow Length=685' Slope=0.0620 '/' Tc=16.3 min UI Adjusted CN=59 Runoff=26.91 cfs 2.613 af

Subcatchment Pre 2: Pre 2 Runoff Area=768,117 sf 12.39% Impervious Runoff Depth>2.14"
Flow Length=1,202' Slope=0.0640 '/' Tc=18.9 min UI Adjusted CN=69 Runoff=32.55 cfs 3.140 af

Subcatchment Pre 3: Pre 3 Runoff Area=249,979 sf 1.07% Impervious Runoff Depth>2.75"
Flow Length=621' Slope=0.0780 '/' Tc=8.8 min CN=76 Runoff=17.66 cfs 1.314 af

Subcatchment Pre 4: Pre 4 Runoff Area=11,316 sf 17.44% Impervious Runoff Depth>1.53"
Flow Length=103' Slope=0.0530 '/' Tc=6.0 min UI Adjusted CN=61 Runoff=0.47 cfs 0.033 af

Reach Pre: Pre Inflow=40.42 cfs 5.827 af
Outflow=40.42 cfs 5.827 af

Reach Pre East: Pre East Inflow=17.66 cfs 3.182 af
Outflow=17.66 cfs 3.182 af

Reach Pre West: Pre West Pond Inflow=27.18 cfs 2.646 af
Outflow=27.18 cfs 2.646 af

Pond East Pond: Existing Pond Peak Elev=263.48' Storage=63,207 cf Inflow=32.55 cfs 3.140 af
Outflow=12.64 cfs 1.868 af

Total Runoff Area = 46.404 ac Runoff Volume = 7.099 af Average Runoff Depth = 1.84"
91.58% Pervious = 42.495 ac 8.42% Impervious = 3.909 ac

Summary for Subcatchment Pre 1: Pre 1

Runoff = 26.91 cfs @ 12.25 hrs, Volume= 2.613 af, Depth> 1.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.50"

Area (sf)	CN	Adj	Description
64,222	98		Unconnected pavement, HSG B
6,212	98		Unconnected pavement, HSG C
0	98		Unconnected pavement, HSG D
15,583	96		Gravel surface, HSG B
0	96		Gravel surface, HSG D
115,244	32		Woods/grass comb., Good, HSG A
52,781	39		>75% Grass cover, Good, HSG A
334,157	58		Woods/grass comb., Good, HSG B
284,524	61		>75% Grass cover, Good, HSG B
61,008	72		Woods/grass comb., Good, HSG C
16,255	74		>75% Grass cover, Good, HSG C
41,971	79		Woods/grass comb., Good, HSG D
0	80		>75% Grass cover, Good, HSG D
991,957	60	59	Weighted Average, UI Adjusted
921,523	57	57	92.90% Pervious Area
70,434	98	98	7.10% Impervious Area
70,434			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.3	685	0.0620	0.70		**Lag/CN Method, Pre 1**

Summary for Subcatchment Pre 2: Pre 2

Runoff = 32.55 cfs @ 12.27 hrs, Volume= 3.140 af, Depth> 2.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.50"

Area (sf)	CN	Adj	Description
63,792	98		Unconnected pavement, HSG B
0	98		Unconnected pavement, HSG C
31,406	98		Unconnected pavement, HSG D
4,316	96		Gravel surface, HSG B
0	96		Gravel surface, HSG D
930	32		Woods/grass comb., Good, HSG A
0	39		>75% Grass cover, Good, HSG A
236,613	58		Woods/grass comb., Good, HSG B
188,779	61		>75% Grass cover, Good, HSG B
0	72		Woods/grass comb., Good, HSG C
0	74		>75% Grass cover, Good, HSG C
167,331	79		Woods/grass comb., Good, HSG D
74,950	80		>75% Grass cover, Good, HSG D
768,117	71	69	Weighted Average, UI Adjusted
672,919	67	67	87.61% Pervious Area
95,198	98	98	12.39% Impervious Area
95,198			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.9	1,202	0.0640	1.06		**Lag/CN Method, Pre 2**

Summary for Subcatchment Pre 3: Pre 3

Runoff = 17.66 cfs @ 12.13 hrs, Volume= 1.314 af, Depth> 2.75"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.50"

Area (sf)	CN	Description
2,674	98	Unconnected pavement, HSG B
0	98	Unconnected pavement, HSG C
0	98	Unconnected pavement, HSG D
596	96	Gravel surface, HSG B
10,405	96	Gravel surface, HSG D
0	32	Woods/grass comb., Good, HSG A
0	39	>75% Grass cover, Good, HSG A
44,436	58	Woods/grass comb., Good, HSG B
0	61	>75% Grass cover, Good, HSG B
0	72	Woods/grass comb., Good, HSG C
0	74	>75% Grass cover, Good, HSG C
187,649	79	Woods/grass comb., Good, HSG D
4,219	80	>75% Grass cover, Good, HSG D
249,979	76	Weighted Average
247,305	76	98.93% Pervious Area
2,674	98	1.07% Impervious Area
2,674		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	621	0.0780	1.18		**Lag/CN Method, Pre 3**

Summary for Subcatchment Pre 4: Pre 4

Runoff = 0.47 cfs @ 12.10 hrs, Volume= 0.033 af, Depth> 1.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.50"

Area (sf)	CN	Adj	Description
1,974	98		Unconnected pavement, HSG B
0	98		Unconnected pavement, HSG C
0	98		Unconnected pavement, HSG D
0	96		Gravel surface, HSG B
0	96		Gravel surface, HSG D
0	32		Woods/grass comb., Good, HSG A
0	39		>75% Grass cover, Good, HSG A
9,342	58		Woods/grass comb., Good, HSG B
0	61		>75% Grass cover, Good, HSG B
0	72		Woods/grass comb., Good, HSG C
0	74		>75% Grass cover, Good, HSG C
0	79		Woods/grass comb., Good, HSG D
0	80		>75% Grass cover, Good, HSG D
11,316	65	61	Weighted Average, UI Adjusted
9,342	58	58	82.56% Pervious Area
1,974	98	98	17.44% Impervious Area
1,974			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.4	103	0.0530	0.50		**Lag/CN Method, Pre 4**
3.4	103	Total, Increased to minimum Tc = 6.0 min			

Summary for Reach Pre: Pre

Inflow Area = 46.404 ac, 8.42% Impervious, Inflow Depth > 1.51" for 25-YR event
Inflow = 40.42 cfs @ 12.20 hrs, Volume= 5.827 af
Outflow = 40.42 cfs @ 12.20 hrs, Volume= 5.827 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Reach Pre East: Pre East

Inflow Area = 23.372 ac, 9.61% Impervious, Inflow Depth > 1.63" for 25-YR event
Inflow = 17.66 cfs @ 12.13 hrs, Volume= 3.182 af
Outflow = 17.66 cfs @ 12.13 hrs, Volume= 3.182 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Reach Pre West: Pre West Pond

Inflow Area = 23.032 ac, 7.22% Impervious, Inflow Depth > 1.38" for 25-YR event
Inflow = 27.18 cfs @ 12.25 hrs, Volume= 2.646 af
Outflow = 27.18 cfs @ 12.25 hrs, Volume= 2.646 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Pond East Pond: Existing Pond

Inflow Area = 17.634 ac, 12.39% Impervious, Inflow Depth > 2.14" for 25-YR event
Inflow = 32.55 cfs @ 12.27 hrs, Volume= 3.140 af
Outflow = 12.64 cfs @ 12.71 hrs, Volume= 1.868 af, Atten= 61%, Lag= 26.4 min
Primary = 12.64 cfs @ 12.71 hrs, Volume= 1.868 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 263.48' @ 12.71 hrs Surf.Area= 53,938 sf Storage= 63,207 cf

Plug-Flow detention time= 148.1 min calculated for 1.868 af (59% of inflow)
Center-of-Mass det. time= 70.2 min (885.7 - 815.5)

Volume	Invert	Avail.Storage	Storage Description
#1	262.00'	64,223 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
262.00	31,406	0	0
263.50	54,224	64,223	64,223

Device	Routing	Invert	Outlet Devices
#1	Primary	263.30'	**70.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=12.57 cfs @ 12.71 hrs HW=263.48' TW=0.00' (Dynamic Tailwater)
↑**1=Broad-Crested Rectangular Weir** (Weir Controls 12.57 cfs @ 0.99 fps)

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment Pre 1: Pre 1 Runoff Area=991,957 sf 7.10% Impervious Runoff Depth>2.09"
Flow Length=685' Slope=0.0620 '/' Tc=16.3 min UI Adjusted CN=59 Runoff=42.55 cfs 3.973 af

Subcatchment Pre 2: Pre 2 Runoff Area=768,117 sf 12.39% Impervious Runoff Depth>3.02"
Flow Length=1,202' Slope=0.0640 '/' Tc=18.9 min UI Adjusted CN=69 Runoff=46.30 cfs 4.436 af

Subcatchment Pre 3: Pre 3 Runoff Area=249,979 sf 1.07% Impervious Runoff Depth>3.73"
Flow Length=621' Slope=0.0780 '/' Tc=8.8 min CN=76 Runoff=23.85 cfs 1.784 af

Subcatchment Pre 4: Pre 4 Runoff Area=11,316 sf 17.44% Impervious Runoff Depth>2.28"
Flow Length=103' Slope=0.0530 '/' Tc=6.0 min UI Adjusted CN=61 Runoff=0.72 cfs 0.049 af

Reach Pre: Pre Inflow=97.30 cfs 8.962 af
Outflow=97.30 cfs 8.962 af

Reach Pre East: Pre East Inflow=63.47 cfs 4.940 af
Outflow=63.47 cfs 4.940 af

Reach Pre West: Pre West Pond Inflow=42.96 cfs 4.022 af
Outflow=42.96 cfs 4.022 af

Pond East Pond: Existing Pond Peak Elev=263.75' Storage=64,223 cf Inflow=46.30 cfs 4.436 af
Outflow=53.21 cfs 3.156 af

Total Runoff Area = 46.404 ac Runoff Volume = 10.242 af Average Runoff Depth = 2.65"
91.58% Pervious = 42.495 ac 8.42% Impervious = 3.909 ac

Summary for Subcatchment Pre 1: Pre 1

Runoff = 42.55 cfs @ 12.24 hrs, Volume= 3.973 af, Depth> 2.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YR Rainfall=6.70"

Area (sf)	CN	Adj	Description
64,222	98		Unconnected pavement, HSG B
6,212	98		Unconnected pavement, HSG C
0	98		Unconnected pavement, HSG D
15,583	96		Gravel surface, HSG B
0	96		Gravel surface, HSG D
115,244	32		Woods/grass comb., Good, HSG A
52,781	39		>75% Grass cover, Good, HSG A
334,157	58		Woods/grass comb., Good, HSG B
284,524	61		>75% Grass cover, Good, HSG B
61,008	72		Woods/grass comb., Good, HSG C
16,255	74		>75% Grass cover, Good, HSG C
41,971	79		Woods/grass comb., Good, HSG D
0	80		>75% Grass cover, Good, HSG D
991,957	60	59	Weighted Average, UI Adjusted
921,523	57	57	92.90% Pervious Area
70,434	98	98	7.10% Impervious Area
70,434			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.3	685	0.0620	0.70		**Lag/CN Method, Pre 1**

Summary for Subcatchment Pre 2: Pre 2

Runoff = 46.30 cfs @ 12.27 hrs, Volume= 4.436 af, Depth> 3.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YR Rainfall=6.70"

Area (sf)	CN	Adj	Description
63,792	98		Unconnected pavement, HSG B
0	98		Unconnected pavement, HSG C
31,406	98		Unconnected pavement, HSG D
4,316	96		Gravel surface, HSG B
0	96		Gravel surface, HSG D
930	32		Woods/grass comb., Good, HSG A
0	39		>75% Grass cover, Good, HSG A
236,613	58		Woods/grass comb., Good, HSG B
188,779	61		>75% Grass cover, Good, HSG B
0	72		Woods/grass comb., Good, HSG C
0	74		>75% Grass cover, Good, HSG C
167,331	79		Woods/grass comb., Good, HSG D
74,950	80		>75% Grass cover, Good, HSG D
768,117	71	69	Weighted Average, UI Adjusted
672,919	67	67	87.61% Pervious Area
95,198	98	98	12.39% Impervious Area
95,198			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.9	1,202	0.0640	1.06		**Lag/CN Method, Pre 2**

Summary for Subcatchment Pre 3: Pre 3

Runoff = 23.85 cfs @ 12.13 hrs, Volume= 1.784 af, Depth> 3.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YR Rainfall=6.70"

Area (sf)	CN	Description
2,674	98	Unconnected pavement, HSG B
0	98	Unconnected pavement, HSG C
0	98	Unconnected pavement, HSG D
596	96	Gravel surface, HSG B
10,405	96	Gravel surface, HSG D
0	32	Woods/grass comb., Good, HSG A
0	39	>75% Grass cover, Good, HSG A
44,436	58	Woods/grass comb., Good, HSG B
0	61	>75% Grass cover, Good, HSG B
0	72	Woods/grass comb., Good, HSG C
0	74	>75% Grass cover, Good, HSG C
187,649	79	Woods/grass comb., Good, HSG D
4,219	80	>75% Grass cover, Good, HSG D
249,979	76	Weighted Average
247,305	76	98.93% Pervious Area
2,674	98	1.07% Impervious Area
2,674		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	621	0.0780	1.18		**Lag/CN Method, Pre 3**

Summary for Subcatchment Pre 4: Pre 4

Runoff = 0.72 cfs @ 12.10 hrs, Volume= 0.049 af, Depth> 2.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YR Rainfall=6.70"

Area (sf)	CN	Adj	Description
1,974	98		Unconnected pavement, HSG B
0	98		Unconnected pavement, HSG C
0	98		Unconnected pavement, HSG D
0	96		Gravel surface, HSG B
0	96		Gravel surface, HSG D
0	32		Woods/grass comb., Good, HSG A
0	39		>75% Grass cover, Good, HSG A
9,342	58		Woods/grass comb., Good, HSG B
0	61		>75% Grass cover, Good, HSG B
0	72		Woods/grass comb., Good, HSG C
0	74		>75% Grass cover, Good, HSG C
0	79		Woods/grass comb., Good, HSG D
0	80		>75% Grass cover, Good, HSG D
11,316	65	61	Weighted Average, UI Adjusted
9,342	58	58	82.56% Pervious Area
1,974	98	98	17.44% Impervious Area
1,974			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.4	103	0.0530	0.50		**Lag/CN Method, Pre 4**
3.4	103	Total, Increased to minimum Tc = 6.0 min			

Summary for Reach Pre: Pre

Inflow Area = 46.404 ac, 8.42% Impervious, Inflow Depth > 2.32" for 100-YR event
Inflow = 97.30 cfs @ 12.39 hrs, Volume= 8.962 af
Outflow = 97.30 cfs @ 12.39 hrs, Volume= 8.962 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Reach Pre East: Pre East

Inflow Area = 23.372 ac, 9.61% Impervious, Inflow Depth > 2.54" for 100-YR event
Inflow = 63.47 cfs @ 12.40 hrs, Volume= 4.940 af
Outflow = 63.47 cfs @ 12.40 hrs, Volume= 4.940 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Reach Pre West: Pre West Pond

Inflow Area = 23.032 ac, 7.22% Impervious, Inflow Depth > 2.10" for 100-YR event
Inflow = 42.96 cfs @ 12.24 hrs, Volume= 4.022 af
Outflow = 42.96 cfs @ 12.24 hrs, Volume= 4.022 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Pond East Pond: Existing Pond

Inflow Area = 17.634 ac, 12.39% Impervious, Inflow Depth > 3.02" for 100-YR event
Inflow = 46.30 cfs @ 12.27 hrs, Volume= 4.436 af
Outflow = 53.21 cfs @ 12.40 hrs, Volume= 3.156 af, Atten= 0%, Lag= 7.8 min
Primary = 53.21 cfs @ 12.40 hrs, Volume= 3.156 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 263.75' @ 12.40 hrs Surf.Area= 54,224 sf Storage= 64,223 cf

Plug-Flow detention time= 111.8 min calculated for 3.156 af (71% of inflow)
Center-of-Mass det. time= 46.7 min (854.5 - 807.8)

Volume	Invert	Avail.Storage	Storage Description
#1	262.00'	64,223 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
262.00	31,406	0	0
263.50	54,224	64,223	64,223

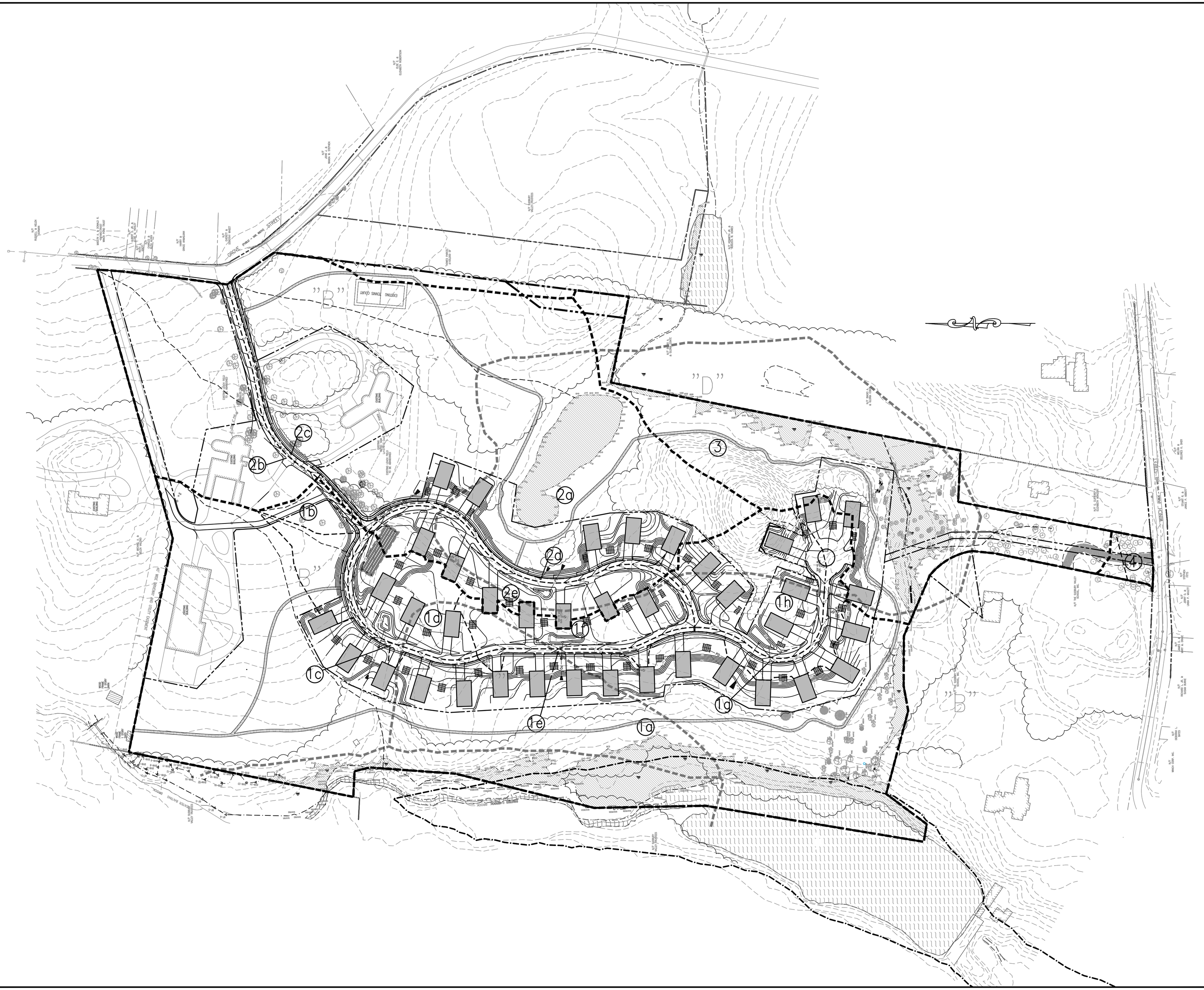
Device	Routing	Invert	Outlet Devices
#1	Primary	263.30'	**70.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=51.12 cfs @ 12.40 hrs HW=263.74' TW=0.00' (Dynamic Tailwater)
↑**1=Broad-Crested Rectangular Weir** (Weir Controls 51.12 cfs @ 1.67 fps)

APPENDIX B

Post-Development Drainage Calculations

Paradise Valley Club
Grove Street
Framingham, Massachusetts



Site:

PARADISE VALLEY CLUB

GROVE AND WINCH STREET
FRAMINGHAM, MASSACHUSETTS

Prepared for:

BENCHMARK ENGINEERING CORP.
120 QUARRY DRIVE
MILFORD, MASSACHUSETTS 01757

LEGEND

- SUBCATMENT BOUNDARY
- DRAINAGE FLOW PATH
- (4) SUBCATCHMENT NUMBER
- NRC SOIL BOUNDARY
- "B" NRC HRDROLOGIC SOIL GROUP

SEAN P. MALONE
CIVIL
REGISTERED PROFESSIONAL ENGINEER
11-2-15

0 40 80 160
SCALE in FEET
1"=80'

OCG
Oak Consulting Group
P.O. Box 1123
Newburyport, MA 01950
Ph. 978.312.3120

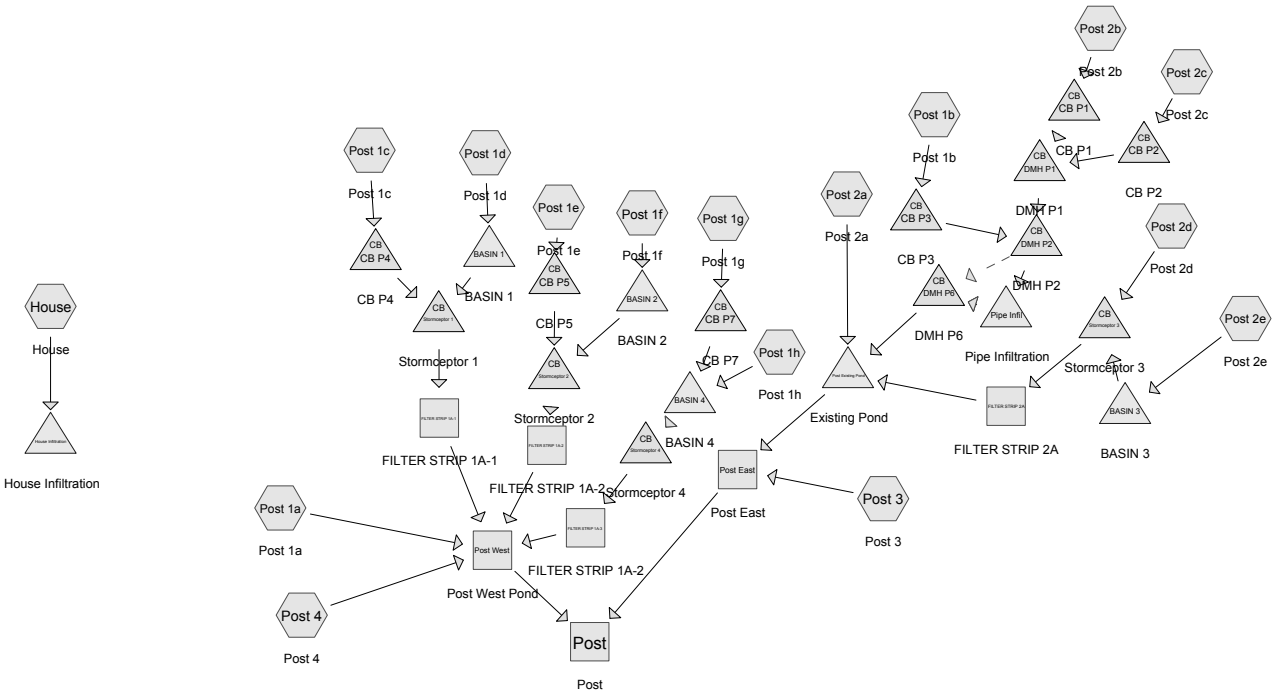
POST-DEVELOPMENT SUBCATCHMENT PLAN

No.	Revision/Issue	Date

Design by:	Checked by:
SPM	PFA
Drawn by:	Approved by:
SPM	PFA
Project:	Date:
13005	November 2, 2015

Sheet:

DR-200



Subcat Reach Pond Link

Routing Diagram for 13005 PRE-POST OSPD

Prepared by {enter your company name here}, Printed 11/18/2015

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentHouse: House Runoff Area=2,100 sf 100.00% Impervious Runoff Depth>2.77"
Flow Length=30' Slope=0.3000 '/' Tc=6.0 min CN=98 Runoff=0.15 cfs 0.011 af

SubcatchmentPost 1a: Post 1a Runoff Area=683,115 sf 11.14% Impervious Runoff Depth>0.32"
Flow Length=936' Slope=0.0530 '/' Tc=22.1 min UI Adjusted CN=59 Runoff=2.64 cfs 0.418 af

SubcatchmentPost 1b: Post 1b Runoff Area=14,627 sf 20.02% Impervious Runoff Depth>0.53"
Flow Length=269' Slope=0.0790 '/' Tc=6.0 min UI Adjusted CN=65 Runoff=0.18 cfs 0.015 af

SubcatchmentPost 1c: Post 1c Runoff Area=31,561 sf 27.39% Impervious Runoff Depth>0.57"
Flow Length=497' Slope=0.0270 '/' Tc=14.4 min UI Adjusted CN=66 Runoff=0.33 cfs 0.034 af

SubcatchmentPost 1d: Post 1d Runoff Area=49,031 sf 16.57% Impervious Runoff Depth>0.32"
Flow Length=285' Slope=0.0530 '/' Tc=8.3 min UI Adjusted CN=59 Runoff=0.23 cfs 0.030 af

SubcatchmentPost 1e: Post 1e Runoff Area=8,566 sf 84.33% Impervious Runoff Depth>2.04"
Flow Length=335' Slope=0.0130 '/' Tc=8.2 min CN=90 Runoff=0.45 cfs 0.033 af

SubcatchmentPost 1f: Post 1f Runoff Area=46,660 sf 17.82% Impervious Runoff Depth>0.35"
Flow Length=456' Slope=0.0370 '/' Tc=13.8 min UI Adjusted CN=60 Runoff=0.23 cfs 0.032 af

SubcatchmentPost 1g: Post 1g Runoff Area=34,936 sf 47.85% Impervious Runoff Depth>1.49"
Flow Length=298' Slope=0.0170 '/' Tc=8.4 min CN=83 Runoff=1.37 cfs 0.100 af

SubcatchmentPost 1h: Post 1h Runoff Area=78,757 sf 16.75% Impervious Runoff Depth>0.89"
Flow Length=454' Slope=0.0480 '/' Tc=9.0 min UI Adjusted CN=73 Runoff=1.73 cfs 0.135 af

SubcatchmentPost 2a: Post 2a Runoff Area=517,689 sf 12.72% Impervious Runoff Depth>0.70"
Flow Length=863' Slope=0.0640 '/' Tc=14.5 min UI Adjusted CN=69 Runoff=7.15 cfs 0.692 af

SubcatchmentPost 2b: Post 2b Runoff Area=158,426 sf 19.37% Impervious Runoff Depth>0.49"
Flow Length=634' Slope=0.0660 '/' Tc=12.1 min UI Adjusted CN=64 Runoff=1.44 cfs 0.150 af

SubcatchmentPost 2c: Post 2c Runoff Area=5,166 sf 100.00% Impervious Runoff Depth>2.77"
Flow Length=431' Slope=0.0120 '/' Tc=7.0 min CN=98 Runoff=0.35 cfs 0.027 af

SubcatchmentPost 2d: Post 2d Runoff Area=11,483 sf 92.82% Impervious Runoff Depth>2.69"
Flow Length=636' Slope=0.0220 '/' Tc=7.5 min CN=97 Runoff=0.76 cfs 0.059 af

SubcatchmentPost 2e: Post 2e Runoff Area=56,126 sf 22.05% Impervious Runoff Depth>1.00"
Flow Length=487' Slope=0.0300 '/' Tc=11.0 min UI Adjusted CN=75 Runoff=1.32 cfs 0.107 af

SubcatchmentPost 3: Post 3 Runoff Area=232,010 sf 1.15% Impervious Runoff Depth>1.00"
Flow Length=457' Slope=0.0780 '/' Tc=7.1 min CN=75 Runoff=6.21 cfs 0.444 af

SubcatchmentPost 4: Post 4 Runoff Area=11,316 sf 17.43% Impervious Runoff Depth>0.39"
Flow Length=103' Slope=0.0530 '/' Tc=6.0 min UI Adjusted CN=61 Runoff=0.08 cfs 0.008 af

Reach FILTER STRIP 1A-1: FILTER Avg. Flow Depth=0.16' Max Vel=0.20 fps Inflow=0.33 cfs 0.035 af
n=0.400 L=194.0' S=0.0567 '/' Capacity=2.83 cfs Outflow=0.23 cfs 0.034 af

Reach FILTER STRIP 1A-2: FILTER Avg. Flow Depth=0.11' Max Vel=0.17 fps Inflow=0.45 cfs 0.033 af
n=0.400 L=202.0' S=0.0743 '/' Capacity=7.62 cfs Outflow=0.27 cfs 0.033 af

Reach FILTER STRIP 1A-3: FILTER Avg. Flow Depth=0.18' Max Vel=0.25 fps Inflow=0.83 cfs 0.153 af
n=0.400 L=177.0' S=0.0791 '/' Capacity=6.70 cfs Outflow=0.70 cfs 0.152 af

Reach FILTER STRIP 2A: FILTER STRIP Avg. Flow Depth=0.29' Max Vel=0.15 fps Inflow=1.41 cfs 0.159 af
n=0.400 L=106.0' S=0.0142 '/' Capacity=3.97 cfs Outflow=1.23 cfs 0.157 af

Reach Post: Post Inflow=6.91 cfs 1.089 af
Outflow=6.91 cfs 1.089 af

Reach Post East: Post East Inflow=6.21 cfs 0.444 af
Outflow=6.21 cfs 0.444 af

Reach Post West: Post West Pond Inflow=3.70 cfs 0.645 af
Outflow=3.70 cfs 0.645 af

Pond BASIN 1: BASIN 1 Peak Elev=267.04' Storage=516 cf Inflow=0.23 cfs 0.030 af
Discarded=0.04 cfs 0.022 af Primary=0.00 cfs 0.000 af Outflow=0.04 cfs 0.023 af

Pond BASIN 2: BASIN 2 Peak Elev=268.50' Storage=399 cf Inflow=0.23 cfs 0.032 af
Discarded=0.05 cfs 0.031 af Primary=0.00 cfs 0.000 af Outflow=0.05 cfs 0.031 af

Pond BASIN 3: BASIN 3 Peak Elev=269.06' Storage=501 cf Inflow=1.32 cfs 0.107 af
Discarded=0.02 cfs 0.007 af Primary=1.02 cfs 0.100 af Outflow=1.03 cfs 0.106 af

Pond BASIN 4: BASIN 4 Peak Elev=270.09' Storage=3,461 cf Inflow=3.07 cfs 0.234 af
Discarded=0.18 cfs 0.069 af Primary=0.50 cfs 0.146 af Secondary=0.33 cfs 0.007 af Outflow=1.01 cfs 0.222 af

Pond CB P1: CB P1 Peak Elev=277.34' Inflow=1.44 cfs 0.150 af
12.0" Round Culvert n=0.012 L=10.0' S=0.0100 '/' Outflow=1.44 cfs 0.150 af

Pond CB P2: CB P2 Peak Elev=277.05' Inflow=0.35 cfs 0.027 af
12.0" Round Culvert n=0.012 L=10.0' S=0.0100 '/' Outflow=0.35 cfs 0.027 af

Pond CB P3: CB P3 Peak Elev=273.23' Inflow=0.18 cfs 0.015 af
12.0" Round Culvert n=0.012 L=27.0' S=0.0056 '/' Outflow=0.18 cfs 0.015 af

Pond CB P4: CB P4 Peak Elev=265.87' Inflow=0.33 cfs 0.034 af
12.0" Round Culvert n=0.013 L=10.0' S=0.0100 '/' Outflow=0.33 cfs 0.034 af

Pond CB P5: CB P5 Peak Elev=267.17' Inflow=0.45 cfs 0.033 af
12.0" Round Culvert n=0.012 L=10.0' S=0.0100 '/' Outflow=0.45 cfs 0.033 af

Pond CB P7: CB P7 Peak Elev=270.09' Inflow=1.37 cfs 0.100 af
12.0" Round Culvert n=0.012 L=30.0' S=0.0050 '/' Outflow=1.37 cfs 0.100 af

Pond DMH P1: DMH P1 Peak Elev=277.03' Inflow=1.65 cfs 0.177 af
15.0" Round Culvert n=0.012 L=220.0' S=0.0155 '/' Outflow=1.65 cfs 0.177 af

Pond DMH P2: DMH P2 Peak Elev=273.23' Inflow=1.79 cfs 0.192 af
Primary=1.64 cfs 0.189 af Secondary=0.15 cfs 0.003 af Outflow=1.79 cfs 0.192 af

Pond DMH P6: DMH P6 Peak Elev=272.75' Inflow=0.15 cfs 0.003 af
15.0" Round Culvert n=0.012 L=110.0' S=0.0050 '/' Outflow=0.15 cfs 0.003 af

Pond House Infiltration: House Infiltration Peak Elev=270.41' Storage=234 cf Inflow=0.15 cfs 0.011 af
Outflow=0.01 cfs 0.008 af

Pond Pipe Infil: Pipe Infiltration Peak Elev=270.71' Storage=2,795 cf Inflow=1.64 cfs 0.189 af
Discarded=0.26 cfs 0.181 af Secondary=0.00 cfs 0.000 af Outflow=0.26 cfs 0.181 af

Pond Post Existing Pond: Existing Pond Peak Elev=262.96' Storage=37,079 cf Inflow=8.37 cfs 0.852 af
Outflow=0.00 cfs 0.000 af

Pond Stormceptor 1: Stormceptor 1 Peak Elev=265.68' Inflow=0.33 cfs 0.035 af
12.0" Round Culvert n=0.013 L=70.0' S=0.0050 '/' Outflow=0.33 cfs 0.035 af

Pond Stormceptor 2: Stormceptor 2 Peak Elev=266.93' Inflow=0.45 cfs 0.033 af
12.0" Round Culvert n=0.012 L=40.0' S=0.0150 '/' Outflow=0.45 cfs 0.033 af

Pond Stormceptor 3: Stormceptor 3 Peak Elev=267.36' Inflow=1.41 cfs 0.159 af
12.0" Round Culvert n=0.012 L=20.0' S=0.0050 '/' Outflow=1.41 cfs 0.159 af

Pond Stormceptor 4: Stormceptor 4 Peak Elev=267.31' Inflow=0.83 cfs 0.153 af
12.0" Round Culvert n=0.012 L=40.0' S=0.0150 '/' Outflow=0.83 cfs 0.153 af

Total Runoff Area = 44.572 ac Runoff Volume = 2.295 af Average Runoff Depth = 0.62"
85.95% Pervious = 38.311 ac 14.05% Impervious = 6.261 ac

Summary for Subcatchment House: House

Runoff = 0.15 cfs @ 12.09 hrs, Volume= 0.011 af, Depth> 2.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.20"

	Area (sf)	CN	Description
	2,100	98	Unconnected pavement, HSG A
*	0	98	Unconnected pavement, HSG B
	0	98	Unconnected pavement, HSG C
	0	98	Unconnected pavement, HSG D
	0	32	Woods/grass comb., Good, HSG A
	0	39	>75% Grass cover, Good, HSG A
	0	58	Woods/grass comb., Good, HSG B
	0	61	>75% Grass cover, Good, HSG B
	0	72	Woods/grass comb., Good, HSG C
	0	74	>75% Grass cover, Good, HSG C
	0	79	Woods/grass comb., Good, HSG D
	0	80	>75% Grass cover, Good, HSG D
	2,100	98	Weighted Average
	2,100	98	100.00% Impervious Area
	2,100		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	30	0.3000	3.01		**Lag/CN Method, Houses**
0.2	30	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment Post 1a: Post 1a

Runoff = 2.64 cfs @ 12.48 hrs, Volume= 0.418 af, Depth> 0.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.20"

Area (sf)	CN	Adj	Description
3,833	98		Unconnected pavement, HSG A
66,078	98		Unconnected pavement, HSG B
6,212	98		Unconnected pavement, HSG C
0	98		Unconnected pavement, HSG D
46,666	32		Woods/grass comb., Good, HSG A
73,498	39		>75% Grass cover, Good, HSG A
153,778	58		Woods/grass comb., Good, HSG B
255,787	61		>75% Grass cover, Good, HSG B
61,008	72		Woods/grass comb., Good, HSG C
16,255	74		>75% Grass cover, Good, HSG C
0	79		Woods/grass comb., Good, HSG D
0	80		>75% Grass cover, Good, HSG D
683,115	61	59	Weighted Average, UI Adjusted
606,992	57	57	88.86% Pervious Area
76,123	98	98	11.14% Impervious Area
76,123			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.1	936	0.0530	0.71		**Lag/CN Method, Post 1a**

Summary for Subcatchment Post 1b: Post 1b

Runoff = 0.18 cfs @ 12.11 hrs, Volume= 0.015 af, Depth> 0.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.20"

Area (sf)	CN	Adj	Description
0	98		Unconnected pavement, HSG A
2,929	98		Unconnected pavement, HSG B
0	98		Unconnected pavement, HSG C
0	98		Unconnected pavement, HSG D
0	32		Woods/grass comb., Good, HSG A
0	39		>75% Grass cover, Good, HSG A
173	58		Woods/grass comb., Good, HSG B
11,525	61		>75% Grass cover, Good, HSG B
0	72		Woods/grass comb., Good, HSG C
0	74		>75% Grass cover, Good, HSG C
0	79		Woods/grass comb., Good, HSG D
0	80		>75% Grass cover, Good, HSG D
14,627	68	65	Weighted Average, UI Adjusted
11,698	61	61	79.98% Pervious Area
2,929	98	98	20.02% Impervious Area
2,929			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.6	269	0.0790	0.81		**Lag/CN Method, Post 1b**
5.6	269	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment Post 1c: Post 1c

Runoff = 0.33 cfs @ 12.24 hrs, Volume= 0.034 af, Depth> 0.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.20"

Area (sf)	CN	Adj	Description
1,896	98		Unconnected pavement, HSG A
6,747	98		Unconnected pavement, HSG B
0	98		Unconnected pavement, HSG C
0	98		Unconnected pavement, HSG D
0	32		Woods/grass comb., Good, HSG A
22	39		>75% Grass cover, Good, HSG A
106	58		Woods/grass comb., Good, HSG B
22,790	61		>75% Grass cover, Good, HSG B
0	72		Woods/grass comb., Good, HSG C
0	74		>75% Grass cover, Good, HSG C
0	79		Woods/grass comb., Good, HSG D
0	80		>75% Grass cover, Good, HSG D
31,561	71	66	Weighted Average, UI Adjusted
22,918	61	61	72.61% Pervious Area
8,643	98	98	27.39% Impervious Area
8,643			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	497	0.0270	0.58		**Lag/CN Method, Post 1c**

Summary for Subcatchment Post 1d: Post 1d

Runoff = 0.23 cfs @ 12.20 hrs, Volume= 0.030 af, Depth> 0.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.20"

Area (sf)	CN	Adj	Description
3,066	98		Unconnected pavement, HSG A
5,058	98		Unconnected pavement, HSG B
0	98		Unconnected pavement, HSG C
0	98		Unconnected pavement, HSG D
0	32		Woods/grass comb., Good, HSG A
11,103	39		>75% Grass cover, Good, HSG A
0	58		Woods/grass comb., Good, HSG B
29,804	61		>75% Grass cover, Good, HSG B
0	72		Woods/grass comb., Good, HSG C
0	74		>75% Grass cover, Good, HSG C
0	79		Woods/grass comb., Good, HSG D
0	80		>75% Grass cover, Good, HSG D
49,031	62	59	Weighted Average, UI Adjusted
40,907	55	55	83.43% Pervious Area
8,124	98	98	16.57% Impervious Area
8,124			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	285	0.0530	0.57		**Lag/CN Method, Post 1d**

Summary for Subcatchment Post 1e: Post 1e

Runoff = 0.45 cfs @ 12.12 hrs, Volume= 0.033 af, Depth> 2.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.20"

Area (sf)	CN	Description
2,800	98	Unconnected pavement, HSG A
4,424	98	Unconnected pavement, HSG B
0	98	Unconnected pavement, HSG C
0	98	Unconnected pavement, HSG D
0	32	Woods/grass comb., Good, HSG A
809	39	>75% Grass cover, Good, HSG A
0	58	Woods/grass comb., Good, HSG B
533	61	>75% Grass cover, Good, HSG B
0	72	Woods/grass comb., Good, HSG C
0	74	>75% Grass cover, Good, HSG C
0	79	Woods/grass comb., Good, HSG D
0	80	>75% Grass cover, Good, HSG D
8,566	90	Weighted Average
1,342	48	15.67% Pervious Area
7,224	98	84.33% Impervious Area
7,224		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.2	335	0.0130	0.68		**Lag/CN Method, Post 1e**

Summary for Subcatchment Post 1f: Post 1f

Runoff = 0.23 cfs @ 12.31 hrs, Volume= 0.032 af, Depth> 0.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.20"

Area (sf)	CN	Adj	Description
2,113	98		Unconnected pavement, HSG A
6,061	98		Unconnected pavement, HSG B
0	98		Unconnected pavement, HSG C
141	98		Unconnected pavement, HSG D
0	32		Woods/grass comb., Good, HSG A
9,211	39		>75% Grass cover, Good, HSG A
0	58		Woods/grass comb., Good, HSG B
28,313	61		>75% Grass cover, Good, HSG B
0	72		Woods/grass comb., Good, HSG C
0	74		>75% Grass cover, Good, HSG C
0	79		Woods/grass comb., Good, HSG D
821	80		>75% Grass cover, Good, HSG D
46,660	64	60	Weighted Average, UI Adjusted
38,345	56	56	82.18% Pervious Area
8,315	98	98	17.82% Impervious Area
8,315			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.8	456	0.0370	0.55		**Lag/CN Method, Post 1f**

Summary for Subcatchment Post 1g: Post 1g

Runoff = 1.37 cfs @ 12.12 hrs, Volume= 0.100 af, Depth> 1.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.20"

Area (sf)	CN	Description
0	98	Unconnected pavement, HSG A
10,112	98	Unconnected pavement, HSG B
0	98	Unconnected pavement, HSG C
6,606	98	Unconnected pavement, HSG D
0	32	Woods/grass comb., Good, HSG A
0	39	>75% Grass cover, Good, HSG A
0	58	Woods/grass comb., Good, HSG B
10,438	61	>75% Grass cover, Good, HSG B
0	72	Woods/grass comb., Good, HSG C
0	74	>75% Grass cover, Good, HSG C
0	79	Woods/grass comb., Good, HSG D
7,780	80	>75% Grass cover, Good, HSG D
34,936	83	Weighted Average
18,218	69	52.15% Pervious Area
16,718	98	47.85% Impervious Area
16,718		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.4	298	0.0170	0.59		**Lag/CN Method, Post 1g**

Summary for Subcatchment Post 1h: Post 1h

Runoff = 1.73 cfs @ 12.14 hrs, Volume= 0.135 af, Depth> 0.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.20"

Area (sf)	CN	Adj	Description
0	98		Unconnected pavement, HSG A
9,536	98		Unconnected pavement, HSG B
0	98		Unconnected pavement, HSG C
3,653	98		Unconnected pavement, HSG D
0	32		Woods/grass comb., Good, HSG A
0	39		>75% Grass cover, Good, HSG A
2,774	58		Woods/grass comb., Good, HSG B
29,588	61		>75% Grass cover, Good, HSG B
0	72		Woods/grass comb., Good, HSG C
0	74		>75% Grass cover, Good, HSG C
15,915	79		Woods/grass comb., Good, HSG D
17,291	80		>75% Grass cover, Good, HSG D
78,757	75	73	Weighted Average, UI Adjusted
65,568	70	70	83.25% Pervious Area
13,189	98	98	16.75% Impervious Area
13,189			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	454	0.0480	0.85		**Lag/CN Method, Post 1h**

Summary for Subcatchment Post 2a: Post 2a

Runoff = 7.15 cfs @ 12.23 hrs, Volume= 0.692 af, Depth> 0.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.20"

Area (sf)	CN	Adj	Description
0	98		Unconnected pavement, HSG A
29,899	98		Unconnected pavement, HSG B
0	98		Unconnected pavement, HSG C
35,948	98		Unconnected pavement, HSG D
0	32		Woods/grass comb., Good, HSG A
0	39		>75% Grass cover, Good, HSG A
175,494	58		Woods/grass comb., Good, HSG B
95,030	61		>75% Grass cover, Good, HSG B
0	72		Woods/grass comb., Good, HSG C
0	74		>75% Grass cover, Good, HSG C
85,803	79		Woods/grass comb., Good, HSG D
95,515	80		>75% Grass cover, Good, HSG D
517,689	71	69	Weighted Average, UI Adjusted
451,842	67	67	87.28% Pervious Area
65,847	98	98	12.72% Impervious Area
65,847			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.5	863	0.0640	0.99		**Lag/CN Method, Post 2a**

Summary for Subcatchment Post 2b: Post 2b

Runoff = 1.44 cfs @ 12.21 hrs, Volume= 0.150 af, Depth> 0.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.20"

Area (sf)	CN	Adj	Description
0	98		Unconnected pavement, HSG A
30,684	98		Unconnected pavement, HSG B
0	98		Unconnected pavement, HSG C
0	98		Unconnected pavement, HSG D
0	32		Woods/grass comb., Good, HSG A
0	39		>75% Grass cover, Good, HSG A
12,389	58		Woods/grass comb., Good, HSG B
115,353	61		>75% Grass cover, Good, HSG B
0	72		Woods/grass comb., Good, HSG C
0	74		>75% Grass cover, Good, HSG C
0	79		Woods/grass comb., Good, HSG D
0	80		>75% Grass cover, Good, HSG D
158,426	68	64	Weighted Average, UI Adjusted
127,742	61	61	80.63% Pervious Area
30,684	98	98	19.37% Impervious Area
30,684			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.1	634	0.0660	0.87		**Lag/CN Method, Post 2b**

Summary for Subcatchment Post 2c: Post 2c

Runoff = 0.35 cfs @ 12.10 hrs, Volume= 0.027 af, Depth> 2.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.20"

Area (sf)	CN	Description
0	98	Unconnected pavement, HSG A
5,166	98	Unconnected pavement, HSG B
0	98	Unconnected pavement, HSG C
0	98	Unconnected pavement, HSG D
0	32	Woods/grass comb., Good, HSG A
0	39	>75% Grass cover, Good, HSG A
0	58	Woods/grass comb., Good, HSG B
0	61	>75% Grass cover, Good, HSG B
0	72	Woods/grass comb., Good, HSG C
0	74	>75% Grass cover, Good, HSG C
0	79	Woods/grass comb., Good, HSG D
0	80	>75% Grass cover, Good, HSG D
5,166	98	Weighted Average
5,166	98	100.00% Impervious Area
5,166		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	431	0.0120	1.02		**Lag/CN Method, Post 2c**

Summary for Subcatchment Post 2d: Post 2d

Runoff = 0.76 cfs @ 12.10 hrs, Volume= 0.059 af, Depth> 2.69"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.20"

Area (sf)	CN	Description
0	98	Unconnected pavement, HSG A
3,797	98	Unconnected pavement, HSG B
0	98	Unconnected pavement, HSG C
6,862	98	Unconnected pavement, HSG D
0	32	Woods/grass comb., Good, HSG A
0	39	>75% Grass cover, Good, HSG A
0	58	Woods/grass comb., Good, HSG B
0	61	>75% Grass cover, Good, HSG B
0	72	Woods/grass comb., Good, HSG C
0	74	>75% Grass cover, Good, HSG C
0	79	Woods/grass comb., Good, HSG D
824	80	>75% Grass cover, Good, HSG D
11,483	97	Weighted Average
824	80	7.18% Pervious Area
10,659	98	92.82% Impervious Area
10,659		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	636	0.0220	1.41		**Lag/CN Method, Post 2d**

Summary for Subcatchment Post 2e: Post 2e

Runoff = 1.32 cfs @ 12.17 hrs, Volume= 0.107 af, Depth> 1.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.20"

Area (sf)	CN	Adj	Description
0	98		Unconnected pavement, HSG A
2,740	98		Unconnected pavement, HSG B
0	98		Unconnected pavement, HSG C
9,637	98		Unconnected pavement, HSG D
0	32		Woods/grass comb., Good, HSG A
0	39		>75% Grass cover, Good, HSG A
0	58		Woods/grass comb., Good, HSG B
17,999	61		>75% Grass cover, Good, HSG B
0	72		Woods/grass comb., Good, HSG C
0	74		>75% Grass cover, Good, HSG C
0	79		Woods/grass comb., Good, HSG D
25,750	80		>75% Grass cover, Good, HSG D
56,126	78	75	Weighted Average, UI Adjusted
43,749	72	72	77.95% Pervious Area
12,377	98	98	22.05% Impervious Area
12,377			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.0	487	0.0300	0.74		**Lag/CN Method, Post 2e**

Summary for Subcatchment Post 3: Post 3

Runoff = 6.21 cfs @ 12.11 hrs, Volume= 0.444 af, Depth> 1.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.20"

Area (sf)	CN	Description
0	98	Unconnected pavement, HSG A
2,674	98	Unconnected pavement, HSG B
0	98	Unconnected pavement, HSG C
0	98	Unconnected pavement, HSG D
0	32	Woods/grass comb., Good, HSG A
0	39	>75% Grass cover, Good, HSG A
43,841	58	Woods/grass comb., Good, HSG B
978	61	>75% Grass cover, Good, HSG B
0	72	Woods/grass comb., Good, HSG C
0	74	>75% Grass cover, Good, HSG C
167,870	79	Woods/grass comb., Good, HSG D
16,647	80	>75% Grass cover, Good, HSG D
232,010	75	Weighted Average
229,336	75	98.85% Pervious Area
2,674	98	1.15% Impervious Area
2,674		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.1	457	0.0780	1.08		**Lag/CN Method, Post 3a**

Summary for Subcatchment Post 4: Post 4

Runoff = 0.08 cfs @ 12.13 hrs, Volume= 0.008 af, Depth> 0.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.20"

Area (sf)	CN	Adj	Description
0	98		Unconnected pavement, HSG A
1,972	98		Unconnected pavement, HSG B
0	98		Unconnected pavement, HSG C
0	98		Unconnected pavement, HSG D
0	32		Woods/grass comb., Good, HSG A
0	39		>75% Grass cover, Good, HSG A
9,344	58		Woods/grass comb., Good, HSG B
0	61		>75% Grass cover, Good, HSG B
0	72		Woods/grass comb., Good, HSG C
0	74		>75% Grass cover, Good, HSG C
0	79		Woods/grass comb., Good, HSG D
0	80		>75% Grass cover, Good, HSG D
11,316	65	61	Weighted Average, UI Adjusted
9,344	58	58	82.57% Pervious Area
1,972	98	98	17.43% Impervious Area
1,972			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.4	103	0.0530	0.50		**Lag/CN Method, Post 4**
3.4	103	Total, Increased to minimum Tc = 6.0 min			

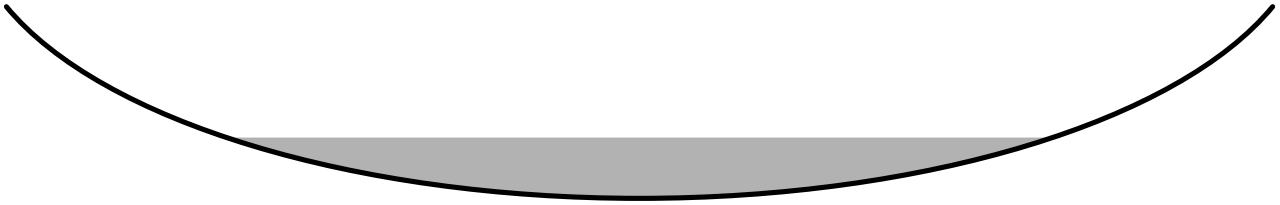
Summary for Reach FILTER STRIP 1A-1: FILTER STRIP 1A-1

Inflow Area = 1.850 ac, 20.80% Impervious, Inflow Depth > 0.23" for 2-YR event
Inflow = 0.33 cfs @ 12.24 hrs, Volume= 0.035 af
Outflow = 0.23 cfs @ 12.48 hrs, Volume= 0.034 af, Atten= 29%, Lag= 14.4 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.20 fps, Min. Travel Time= 16.4 min
Avg. Velocity = 0.11 fps, Avg. Travel Time= 28.7 min

Peak Storage= 231 cf @ 12.48 hrs
Average Depth at Peak Storage= 0.16'
Bank-Full Depth= 0.50' Flow Area= 6.7 sf, Capacity= 2.83 cfs

20.00' x 0.50' deep Parabolic Channel, n= 0.400 Sheet flow: Woods+light brush
Length= 194.0' Slope= 0.0567 '/'
Inlet Invert= 265.00', Outlet Invert= 254.00'



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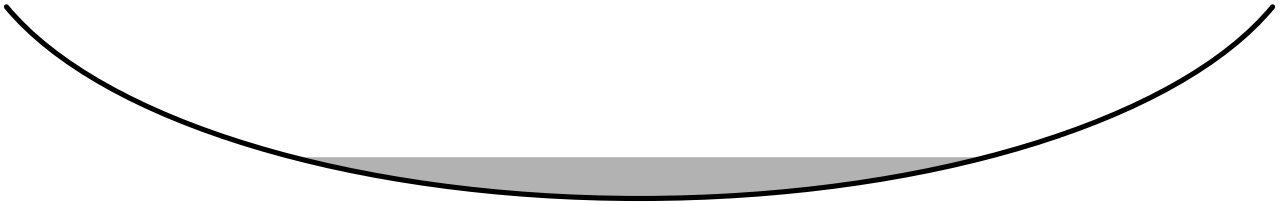
Summary for Reach FILTER STRIP 1A-2: FILTER STRIP 1A-2

Inflow Area = 1.268 ac, 28.14% Impervious, Inflow Depth > 0.32" for 2-YR event
Inflow = 0.45 cfs @ 12.12 hrs, Volume= 0.033 af
Outflow = 0.27 cfs @ 12.26 hrs, Volume= 0.033 af, Atten= 40%, Lag= 8.7 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.17 fps, Min. Travel Time= 19.3 min
Avg. Velocity = 0.07 fps, Avg. Travel Time= 46.9 min

Peak Storage= 315 cf @ 12.26 hrs
Average Depth at Peak Storage= 0.11'
Bank-Full Depth= 0.50' Flow Area= 15.7 sf, Capacity= 7.62 cfs

47.00' x 0.50' deep Parabolic Channel, n= 0.400 Sheet flow: Woods+light brush
Length= 202.0' Slope= 0.0743 '/'
Inlet Invert= 266.00', Outlet Invert= 251.00'



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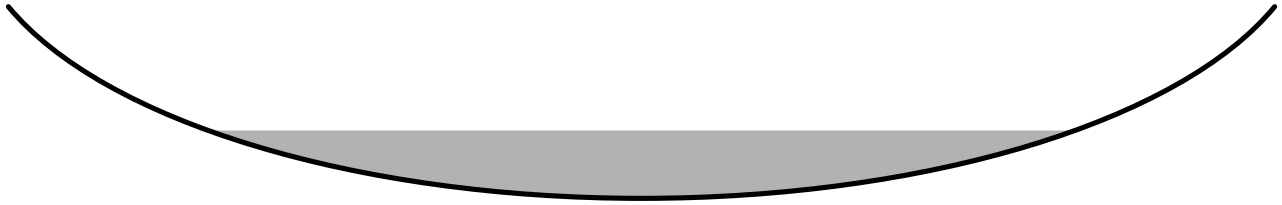
Summary for Reach FILTER STRIP 1A-3: FILTER STRIP 1A-2

Inflow Area = 2.610 ac, 26.31% Impervious, Inflow Depth > 0.70" for 2-YR event
Inflow = 0.83 cfs @ 12.52 hrs, Volume= 0.153 af
Outflow = 0.70 cfs @ 12.65 hrs, Volume= 0.152 af, Atten= 15%, Lag= 7.7 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.25 fps, Min. Travel Time= 11.7 min
Avg. Velocity = 0.16 fps, Avg. Travel Time= 18.4 min

Peak Storage= 497 cf @ 12.65 hrs
Average Depth at Peak Storage= 0.18'
Bank-Full Depth= 0.50' Flow Area= 13.3 sf, Capacity= 6.70 cfs

40.00' x 0.50' deep Parabolic Channel, n= 0.400 Sheet flow: Woods+light brush
Length= 177.0' Slope= 0.0791 '/'
Inlet Invert= 267.00', Outlet Invert= 253.00'



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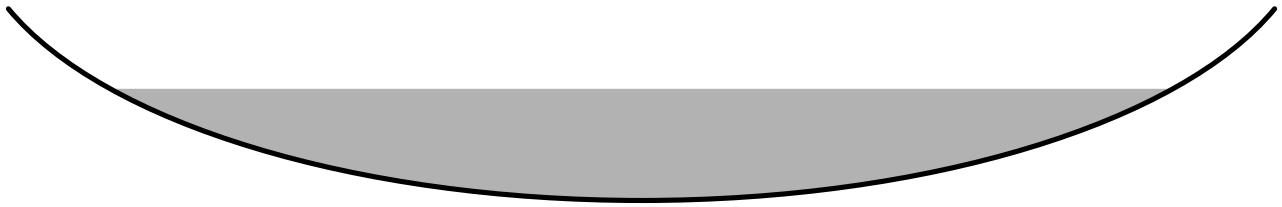
Summary for Reach FILTER STRIP 2A: FILTER STRIP 2A

Inflow Area = 1.552 ac, 34.07% Impervious, Inflow Depth > 1.23" for 2-YR event
Inflow = 1.41 cfs @ 12.26 hrs, Volume= 0.159 af
Outflow = 1.23 cfs @ 12.35 hrs, Volume= 0.157 af, Atten= 13%, Lag= 5.7 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.15 fps, Min. Travel Time= 11.9 min
Avg. Velocity = 0.06 fps, Avg. Travel Time= 29.6 min

Peak Storage= 879 cf @ 12.35 hrs
Average Depth at Peak Storage= 0.29'
Bank-Full Depth= 0.50' Flow Area= 18.7 sf, Capacity= 3.97 cfs

56.00' x 0.50' deep Parabolic Channel, n= 0.400 Sheet flow: Woods+light brush
Length= 106.0' Slope= 0.0142 '/'
Inlet Invert= 266.00', Outlet Invert= 264.50'



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Summary for Reach Post: Post

Inflow Area = 44.524 ac, 13.95% Impervious, Inflow Depth > 0.29" for 2-YR event
Inflow = 6.91 cfs @ 12.12 hrs, Volume= 1.089 af
Outflow = 6.91 cfs @ 12.12 hrs, Volume= 1.089 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Reach Post East: Post East

Inflow Area = 22.854 ac, 13.09% Impervious, Inflow Depth > 0.23" for 2-YR event
Inflow = 6.21 cfs @ 12.11 hrs, Volume= 0.444 af
Outflow = 6.21 cfs @ 12.11 hrs, Volume= 0.444 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Reach Post West: Post West Pond

Inflow Area = 21.670 ac, 14.86% Impervious, Inflow Depth > 0.36" for 2-YR event
Inflow = 3.70 cfs @ 12.52 hrs, Volume= 0.645 af
Outflow = 3.70 cfs @ 12.52 hrs, Volume= 0.645 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Pond BASIN 1: BASIN 1

Inflow Area = 1.126 ac, 16.57% Impervious, Inflow Depth > 0.32" for 2-YR event
Inflow = 0.23 cfs @ 12.20 hrs, Volume= 0.030 af
Outflow = 0.04 cfs @ 15.16 hrs, Volume= 0.023 af, Atten= 83%, Lag= 177.4 min
Discarded = 0.04 cfs @ 15.16 hrs, Volume= 0.022 af
Primary = 0.00 cfs @ 15.16 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 267.04' @ 15.16 hrs Surf.Area= 652 sf Storage= 516 cf

Plug-Flow detention time= 161.8 min calculated for 0.023 af (74% of inflow)
Center-of-Mass det. time= 95.1 min (962.1 - 867.0)

Volume	Invert	Avail.Storage	Storage Description
#1	266.00'	2,116 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
266.00	358	0	0
267.00	624	491	491
268.00	1,341	983	1,474
268.40	1,873	643	2,116

Device	Routing	Invert	Outlet Devices
#1	Discarded	266.00'	**2.410 in/hr Exfiltration over Surface area**
#2	Primary	268.00'	**12.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Primary	267.00'	**4.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.04 cfs @ 15.16 hrs HW=267.04' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=0.00 cfs @ 15.16 hrs HW=267.04' TW=265.47' (Dynamic Tailwater)
├**2=Orifice/Grate** (Controls 0.00 cfs)
└**3=Orifice/Grate** (Orifice Controls 0.00 cfs @ 0.67 fps)

Summary for Pond BASIN 2: BASIN 2

Inflow Area = 1.071 ac, 17.82% Impervious, Inflow Depth > 0.35" for 2-YR event
Inflow = 0.23 cfs @ 12.31 hrs, Volume= 0.032 af
Outflow = 0.05 cfs @ 14.08 hrs, Volume= 0.031 af, Atten= 78%, Lag= 106.6 min
Discarded = 0.05 cfs @ 14.08 hrs, Volume= 0.031 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 268.50' @ 14.08 hrs Surf.Area= 934 sf Storage= 399 cf

Plug-Flow detention time= 91.7 min calculated for 0.031 af (99% of inflow)
Center-of-Mass det. time= 87.0 min (953.4 - 866.4)

Volume	Invert	Avail.Storage	Storage Description
#1	268.00'	2,728 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
268.00	660	0	0
269.00	1,207	934	934
270.00	2,382	1,795	2,728

Device	Routing	Invert	Outlet Devices
#1	Discarded	268.00'	**2.410 in/hr Exfiltration over Surface area**
#2	Primary	269.00'	**15.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.05 cfs @ 14.08 hrs HW=268.50' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.05 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=268.00' TW=266.60' (Dynamic Tailwater)
↑—**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond BASIN 3: BASIN 3

Inflow Area = 1.288 ac, 22.05% Impervious, Inflow Depth > 1.00" for 2-YR event
Inflow = 1.32 cfs @ 12.17 hrs, Volume= 0.107 af
Outflow = 1.03 cfs @ 12.28 hrs, Volume= 0.106 af, Atten= 22%, Lag= 7.0 min
Discarded = 0.02 cfs @ 12.28 hrs, Volume= 0.007 af
Primary = 1.02 cfs @ 12.28 hrs, Volume= 0.100 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 269.06' @ 12.28 hrs Surf.Area= 686 sf Storage= 501 cf

Plug-Flow detention time= 9.1 min calculated for 0.106 af (99% of inflow)
Center-of-Mass det. time= 6.6 min (826.3 - 819.7)

Volume	Invert	Avail.Storage	Storage Description
#1	268.00'	921 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
268.00	309	0	0
269.00	621	465	465
269.50	1,202	456	921

Device	Routing	Invert	Outlet Devices
#1	Discarded	268.00'	**1.000 in/hr Exfiltration over Surface area**
#2	Primary	269.00'	**15.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Primary	268.00'	**6.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.02 cfs @ 12.28 hrs HW=269.05' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=1.00 cfs @ 12.28 hrs HW=269.05' TW=267.35' (Dynamic Tailwater)
├**2=Orifice/Grate** (Weir Controls 0.16 cfs @ 0.75 fps)
└**3=Orifice/Grate** (Orifice Controls 0.85 cfs @ 4.31 fps)

Summary for Pond BASIN 4: BASIN 4

Inflow Area = 2.610 ac, 26.31% Impervious, Inflow Depth > 1.08" for 2-YR event
Inflow = 3.07 cfs @ 12.13 hrs, Volume= 0.234 af
Outflow = 1.01 cfs @ 12.52 hrs, Volume= 0.222 af, Atten= 67%, Lag= 23.4 min
Discarded = 0.18 cfs @ 12.52 hrs, Volume= 0.069 af
Primary = 0.50 cfs @ 12.52 hrs, Volume= 0.146 af
Secondary = 0.33 cfs @ 12.52 hrs, Volume= 0.007 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 270.09' @ 12.52 hrs Surf.Area= 3,310 sf Storage= 3,461 cf

Plug-Flow detention time= 63.8 min calculated for 0.221 af (94% of inflow)
Center-of-Mass det. time= 45.6 min (857.9 - 812.3)

Volume	Invert	Avail.Storage	Storage Description
#1	268.00'	7,263 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
268.00	746	0	0
269.00	1,234	990	990
270.00	3,149	2,192	3,182
271.00	5,014	4,082	7,263

Device	Routing	Invert	Outlet Devices
#1	Discarded	268.00'	**2.410 in/hr Exfiltration over Surface area**
#2	Secondary	270.00'	**15.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

#3 Primary 268.50' **4.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.18 cfs @ 12.52 hrs HW=270.09' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.18 cfs)

Primary OutFlow Max=0.50 cfs @ 12.52 hrs HW=270.09' TW=267.30' (Dynamic Tailwater)
└**3=Orifice/Grate** (Orifice Controls 0.50 cfs @ 5.73 fps)

Secondary OutFlow Max=0.32 cfs @ 12.52 hrs HW=270.09' TW=267.30' (Dynamic Tailwater)
└**2=Orifice/Grate** (Weir Controls 0.32 cfs @ 0.95 fps)

Summary for Pond CB P1: CB P1

Inflow Area = 3.637 ac, 19.37% Impervious, Inflow Depth > 0.49" for 2-YR event
Inflow = 1.44 cfs @ 12.21 hrs, Volume= 0.150 af
Outflow = 1.44 cfs @ 12.21 hrs, Volume= 0.150 af, Atten= 0%, Lag= 0.0 min
Primary = 1.44 cfs @ 12.21 hrs, Volume= 0.150 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 277.34' @ 12.21 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	276.60'	**12.0" Round 12" Culvert** L= 10.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 276.60' / 276.50' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.42 cfs @ 12.21 hrs HW=277.33' TW=277.02' (Dynamic Tailwater)
└**1=12" Culvert** (Barrel Controls 1.42 cfs @ 3.22 fps)

Summary for Pond CB P2: CB P2

Inflow Area = 0.119 ac,100.00% Impervious, Inflow Depth > 2.77" for 2-YR event
Inflow = 0.35 cfs @ 12.10 hrs, Volume= 0.027 af
Outflow = 0.35 cfs @ 12.10 hrs, Volume= 0.027 af, Atten= 0%, Lag= 0.0 min
Primary = 0.35 cfs @ 12.10 hrs, Volume= 0.027 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 277.05' @ 12.24 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	276.60'	**12.0" Round 12" Culvert** L= 10.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 276.60' / 276.50' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.14 cfs @ 12.10 hrs HW=276.95' TW=276.93' (Dynamic Tailwater)
└**1=12" Culvert** (Outlet Controls 0.14 cfs @ 0.84 fps)

Summary for Pond CB P3: CB P3

Inflow Area = 0.336 ac, 20.02% Impervious, Inflow Depth > 0.53" for 2-YR event
Inflow = 0.18 cfs @ 12.11 hrs, Volume= 0.015 af
Outflow = 0.18 cfs @ 12.11 hrs, Volume= 0.015 af, Atten= 0%, Lag= 0.0 min
Primary = 0.18 cfs @ 12.11 hrs, Volume= 0.015 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 273.23' @ 12.24 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	272.75'	**12.0" Round 12" Culvert** L= 27.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 272.75' / 272.60' S= 0.0056 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 12.11 hrs HW=273.11' TW=273.17' (Dynamic Tailwater)
1=12" Culvert (Controls 0.00 cfs)

Summary for Pond CB P4: CB P4

Inflow Area = 0.725 ac, 27.39% Impervious, Inflow Depth > 0.57" for 2-YR event
Inflow = 0.33 cfs @ 12.24 hrs, Volume= 0.034 af
Outflow = 0.33 cfs @ 12.24 hrs, Volume= 0.034 af, Atten= 0%, Lag= 0.0 min
Primary = 0.33 cfs @ 12.24 hrs, Volume= 0.034 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 265.87' @ 12.24 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	265.55'	**12.0" Round Culvert** L= 10.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 265.55' / 265.45' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=0.33 cfs @ 12.24 hrs HW=265.87' TW=265.68' (Dynamic Tailwater)
1=Culvert (Barrel Controls 0.33 cfs @ 2.31 fps)

Summary for Pond CB P5: CB P5

Inflow Area = 0.197 ac, 84.33% Impervious, Inflow Depth > 2.04" for 2-YR event
Inflow = 0.45 cfs @ 12.12 hrs, Volume= 0.033 af
Outflow = 0.45 cfs @ 12.12 hrs, Volume= 0.033 af, Atten= 0%, Lag= 0.0 min
Primary = 0.45 cfs @ 12.12 hrs, Volume= 0.033 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 267.17' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	266.80'	**12.0" Round 12" Culvert** L= 10.0' CPP, square edge headwall, Ke= 0.500

Inlet / Outlet Invert= 266.80' / 266.70' S= 0.0100 '/' Cc= 0.900
n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.44 cfs @ 12.12 hrs HW=267.17' TW=266.93' (Dynamic Tailwater)
1=12" Culvert (Barrel Controls 0.44 cfs @ 2.50 fps)

Summary for Pond CB P7: CB P7

Inflow Area = 0.802 ac, 47.85% Impervious, Inflow Depth > 1.49" for 2-YR event
Inflow = 1.37 cfs @ 12.12 hrs, Volume= 0.100 af
Outflow = 1.37 cfs @ 12.12 hrs, Volume= 0.100 af, Atten= 0%, Lag= 0.0 min
Primary = 1.37 cfs @ 12.12 hrs, Volume= 0.100 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 270.09' @ 12.56 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	267.80'	**12.0" Round 12" Culvert**
			L= 30.0' CPP, square edge headwall, Ke= 0.500
			Inlet / Outlet Invert= 267.80' / 267.65' S= 0.0050 '/' Cc= 0.900
			n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 12.12 hrs HW=269.35' TW=269.44' (Dynamic Tailwater)
1=12" Culvert (Controls 0.00 cfs)

Summary for Pond DMH P1: DMH P1

Inflow Area = 3.756 ac, 21.91% Impervious, Inflow Depth > 0.57" for 2-YR event
Inflow = 1.65 cfs @ 12.20 hrs, Volume= 0.177 af
Outflow = 1.65 cfs @ 12.20 hrs, Volume= 0.177 af, Atten= 0%, Lag= 0.0 min
Primary = 1.65 cfs @ 12.20 hrs, Volume= 0.177 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 277.03' @ 12.20 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	276.40'	**15.0" Round 15" Culvert**
			L= 220.0' CPP, square edge headwall, Ke= 0.500
			Inlet / Outlet Invert= 276.40' / 273.00' S= 0.0155 '/' Cc= 0.900
			n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=1.65 cfs @ 12.20 hrs HW=277.03' TW=273.23' (Dynamic Tailwater)
1=15" Culvert (Inlet Controls 1.65 cfs @ 2.69 fps)

Summary for Pond DMH P2: DMH P2

Inflow Area = 4.091 ac, 21.76% Impervious, Inflow Depth > 0.56" for 2-YR event
Inflow = 1.79 cfs @ 12.19 hrs, Volume= 0.192 af
Outflow = 1.79 cfs @ 12.19 hrs, Volume= 0.192 af, Atten= 0%, Lag= 0.0 min
Primary = 1.64 cfs @ 12.19 hrs, Volume= 0.189 af
Secondary = 0.15 cfs @ 12.19 hrs, Volume= 0.003 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 273.23' @ 12.19 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	272.50'	**15.0" Round 15" Culvert** L= 40.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 272.50' / 272.30' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#2	Secondary	273.00'	**15.0" Round 15"Culvert** L= 140.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 273.00' / 272.00' S= 0.0071 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=1.63 cfs @ 12.19 hrs HW=273.22' TW=269.88' (Dynamic Tailwater)
1=15" Culvert (Barrel Controls 1.63 cfs @ 3.20 fps)

Secondary OutFlow Max=0.15 cfs @ 12.19 hrs HW=273.22' TW=272.75' (Dynamic Tailwater)
2=15"Culvert (Outlet Controls 0.15 cfs @ 1.50 fps)

Summary for Pond DMH P6: DMH P6

Inflow Area = 4.091 ac, 21.76% Impervious, Inflow Depth = 0.01" for 2-YR event
Inflow = 0.15 cfs @ 12.19 hrs, Volume= 0.003 af
Outflow = 0.15 cfs @ 12.19 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min
Primary = 0.15 cfs @ 12.19 hrs, Volume= 0.003 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 272.75' @ 12.19 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	272.55'	**15.0" Round Culvert** L= 110.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 272.55' / 272.00' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=0.15 cfs @ 12.19 hrs HW=272.75' TW=262.15' (Dynamic Tailwater)
1=Culvert (Barrel Controls 0.15 cfs @ 1.78 fps)

Summary for Pond House Infiltration: House Infiltration

Inflow Area = 0.048 ac,100.00% Impervious, Inflow Depth > 2.77" for 2-YR event
Inflow = 0.15 cfs @ 12.09 hrs, Volume= 0.011 af
Outflow = 0.01 cfs @ 11.10 hrs, Volume= 0.008 af, Atten= 95%, Lag= 0.0 min
Discarded = 0.01 cfs @ 11.10 hrs, Volume= 0.008 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 270.41' @ 14.16 hrs Surf.Area= 323 sf Storage= 234 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 86.9 min (825.4 - 738.6)

Volume	Invert	Avail.Storage	Storage Description
#1	270.00'	373 cf	**ADS_StormTech SC-740** x 8 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 2 rows
#2	269.00'	368 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 1,292 cf Overall - 373 cf Embedded = 919 cf x 40.0% Voids
		741 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
269.00	323	0	0
273.00	323	1,292	1,292

Device	Routing	Invert	Outlet Devices
#1	Discarded	269.00'	**1.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.01 cfs @ 11.10 hrs HW=269.04' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Summary for Pond Pipe Infil: Pipe Infiltration

Inflow Area = 4.091 ac, 21.76% Impervious, Inflow Depth > 0.55" for 2-YR event
Inflow = 1.64 cfs @ 12.19 hrs, Volume= 0.189 af
Outflow = 0.26 cfs @ 12.10 hrs, Volume= 0.181 af, Atten= 84%, Lag= 0.0 min
Discarded = 0.26 cfs @ 12.10 hrs, Volume= 0.181 af
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 270.71' @ 14.16 hrs Surf.Area= 4,588 sf Storage= 2,795 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 104.4 min (939.9 - 835.5)

Volume	Invert	Avail.Storage	Storage Description
#1	270.00'	5,089 cf	**36.0" Round Pipe Storage** x 6 Inside #2 L= 120.0'
#2	269.50'	5,305 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 18,352 cf Overall - 5,089 cf Embedded = 13,263 cf x 40.0% Voids
#3	270.00'	88 cf	**4.00'D x 7.00'H Vertical Cone/Cylinder** Impervious
		10,482 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
269.50	4,588	0	0
273.50	4,588	18,352	18,352

Device	Routing	Invert	Outlet Devices
#1	Discarded	269.50'	**2.410 in/hr Exfiltration over Surface area**
#2	Secondary	273.00'	**15.0" Round 15" Culvert**

L= 26.0' CPP, square edge headwall, Ke= 0.500
Inlet / Outlet Invert= 273.00' / 272.65' S= 0.0135 '/' Cc= 0.900
n= 0.012, Flow Area= 1.23 sf

Discarded OutFlow Max=0.26 cfs @ 12.10 hrs HW=269.65' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.26 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=269.50' TW=272.55' (Dynamic Tailwater)
└**2=15" Culvert** (Controls 0.00 cfs)

Summary for Pond Post Existing Pond: Existing Pond

Inflow Area = 17.528 ac, 16.72% Impervious, Inflow Depth > 0.58" for 2-YR event
Inflow = 8.37 cfs @ 12.24 hrs, Volume= 0.852 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 262.96' @ 20.00 hrs Surf.Area= 45,983 sf Storage= 37,079 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	262.00'	64,223 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
262.00	31,406	0	0
263.50	54,224	64,223	64,223

Device	Routing	Invert	Outlet Devices
#1	Primary	263.30'	**70.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=262.00' TW=0.00' (Dynamic Tailwater)
└**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond Stormceptor 1: Stormceptor 1

Inflow Area = 1.850 ac, 20.80% Impervious, Inflow Depth > 0.23" for 2-YR event
Inflow = 0.33 cfs @ 12.24 hrs, Volume= 0.035 af
Outflow = 0.33 cfs @ 12.24 hrs, Volume= 0.035 af, Atten= 0%, Lag= 0.0 min
Primary = 0.33 cfs @ 12.24 hrs, Volume= 0.035 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Peak Elev= 265.68' @ 12.24 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	265.35'	**12.0" Round 12" Culvert** L= 70.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 265.35' / 265.00' S= 0.0050 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=0.33 cfs @ 12.24 hrs HW=265.68' TW=265.12' (Dynamic Tailwater)
↑—**1=12" Culvert** (Barrel Controls 0.33 cfs @ 2.16 fps)

Summary for Pond Stormceptor 2: Stormceptor 2

Inflow Area = 1.268 ac, 28.14% Impervious, Inflow Depth > 0.32" for 2-YR event
Inflow = 0.45 cfs @ 12.12 hrs, Volume= 0.033 af
Outflow = 0.45 cfs @ 12.12 hrs, Volume= 0.033 af, Atten= 0%, Lag= 0.0 min
Primary = 0.45 cfs @ 12.12 hrs, Volume= 0.033 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 266.93' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	266.60'	**12.0" Round 12" Culvert** L= 40.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 266.60' / 266.00' S= 0.0150 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.44 cfs @ 12.12 hrs HW=266.93' TW=266.09' (Dynamic Tailwater)
↑—**1=12" Culvert** (Inlet Controls 0.44 cfs @ 1.95 fps)

Summary for Pond Stormceptor 3: Stormceptor 3

Inflow Area = 1.552 ac, 34.07% Impervious, Inflow Depth > 1.23" for 2-YR event
Inflow = 1.41 cfs @ 12.26 hrs, Volume= 0.159 af
Outflow = 1.41 cfs @ 12.26 hrs, Volume= 0.159 af, Atten= 0%, Lag= 0.0 min
Primary = 1.41 cfs @ 12.26 hrs, Volume= 0.159 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 267.36' @ 12.26 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	266.60'	**12.0" Round 12" Culvert** L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 266.60' / 266.50' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.40 cfs @ 12.26 hrs HW=267.35' TW=266.28' (Dynamic Tailwater)
↑—**1=12" Culvert** (Barrel Controls 1.40 cfs @ 3.06 fps)

Summary for Pond Stormceptor 4: Stormceptor 4

Inflow Area = 2.610 ac, 26.31% Impervious, Inflow Depth > 0.70" for 2-YR event
Inflow = 0.83 cfs @ 12.52 hrs, Volume= 0.153 af
Outflow = 0.83 cfs @ 12.52 hrs, Volume= 0.153 af, Atten= 0%, Lag= 0.0 min
Primary = 0.83 cfs @ 12.52 hrs, Volume= 0.153 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 267.31' @ 12.56 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	266.60'	**12.0" Round 12" Culvert** L= 40.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 266.60' / 266.00' S= 0.0150 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.79 cfs @ 12.52 hrs HW=267.30' TW=267.16' (Dynamic Tailwater)
1=12" Culvert (Outlet Controls 0.79 cfs @ 1.88 fps)

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentHouse: House Runoff Area=2,100 sf 100.00% Impervious Runoff Depth>4.05"
Flow Length=30' Slope=0.3000 '/' Tc=6.0 min CN=98 Runoff=0.21 cfs 0.016 af

SubcatchmentPost 1a: Post 1a Runoff Area=683,115 sf 11.14% Impervious Runoff Depth>0.90"
Flow Length=936' Slope=0.0530 '/' Tc=22.1 min UI Adjusted CN=59 Runoff=10.13 cfs 1.177 af

SubcatchmentPost 1b: Post 1b Runoff Area=14,627 sf 20.02% Impervious Runoff Depth>1.27"
Flow Length=269' Slope=0.0790 '/' Tc=6.0 min UI Adjusted CN=65 Runoff=0.50 cfs 0.035 af

SubcatchmentPost 1c: Post 1c Runoff Area=31,561 sf 27.39% Impervious Runoff Depth>1.33"
Flow Length=497' Slope=0.0270 '/' Tc=14.4 min UI Adjusted CN=66 Runoff=0.89 cfs 0.080 af

SubcatchmentPost 1d: Post 1d Runoff Area=49,031 sf 16.57% Impervious Runoff Depth>0.91"
Flow Length=285' Slope=0.0530 '/' Tc=8.3 min UI Adjusted CN=59 Runoff=1.02 cfs 0.085 af

SubcatchmentPost 1e: Post 1e Runoff Area=8,566 sf 84.33% Impervious Runoff Depth>3.30"
Flow Length=335' Slope=0.0130 '/' Tc=8.2 min CN=90 Runoff=0.72 cfs 0.054 af

SubcatchmentPost 1f: Post 1f Runoff Area=46,660 sf 17.82% Impervious Runoff Depth>0.96"
Flow Length=456' Slope=0.0370 '/' Tc=13.8 min UI Adjusted CN=60 Runoff=0.90 cfs 0.086 af

SubcatchmentPost 1g: Post 1g Runoff Area=34,936 sf 47.85% Impervious Runoff Depth>2.63"
Flow Length=298' Slope=0.0170 '/' Tc=8.4 min CN=83 Runoff=2.40 cfs 0.176 af

SubcatchmentPost 1h: Post 1h Runoff Area=78,757 sf 16.75% Impervious Runoff Depth>1.82"
Flow Length=454' Slope=0.0480 '/' Tc=9.0 min UI Adjusted CN=73 Runoff=3.65 cfs 0.274 af

SubcatchmentPost 2a: Post 2a Runoff Area=517,689 sf 12.72% Impervious Runoff Depth>1.53"
Flow Length=863' Slope=0.0640 '/' Tc=14.5 min UI Adjusted CN=69 Runoff=17.10 cfs 1.512 af

SubcatchmentPost 2b: Post 2b Runoff Area=158,426 sf 19.37% Impervious Runoff Depth>1.20"
Flow Length=634' Slope=0.0660 '/' Tc=12.1 min UI Adjusted CN=64 Runoff=4.19 cfs 0.364 af

SubcatchmentPost 2c: Post 2c Runoff Area=5,166 sf 100.00% Impervious Runoff Depth>4.05"
Flow Length=431' Slope=0.0120 '/' Tc=7.0 min CN=98 Runoff=0.51 cfs 0.040 af

SubcatchmentPost 2d: Post 2d Runoff Area=11,483 sf 92.82% Impervious Runoff Depth>3.97"
Flow Length=636' Slope=0.0220 '/' Tc=7.5 min CN=97 Runoff=1.10 cfs 0.087 af

SubcatchmentPost 2e: Post 2e Runoff Area=56,126 sf 22.05% Impervious Runoff Depth>1.97"
Flow Length=487' Slope=0.0300 '/' Tc=11.0 min UI Adjusted CN=75 Runoff=2.68 cfs 0.211 af

SubcatchmentPost 3: Post 3 Runoff Area=232,010 sf 1.15% Impervious Runoff Depth>1.97"
Flow Length=457' Slope=0.0780 '/' Tc=7.1 min CN=75 Runoff=12.56 cfs 0.874 af

SubcatchmentPost 4: Post 4 Runoff Area=11,316 sf 17.43% Impervious Runoff Depth>1.02"
Flow Length=103' Slope=0.0530 '/' Tc=6.0 min UI Adjusted CN=61 Runoff=0.30 cfs 0.022 af

Reach FILTER STRIP 1A-1: FILTER Avg. Flow Depth=0.29' Max Vel=0.30 fps Inflow=1.06 cfs 0.125 af
n=0.400 L=194.0' S=0.0567 '/' Capacity=2.83 cfs Outflow=0.88 cfs 0.124 af

Reach FILTER STRIP 1A-2: FILTER Avg. Flow Depth=0.14' Max Vel=0.21 fps Inflow=0.72 cfs 0.079 af
n=0.400 L=202.0' S=0.0743 '/' Capacity=7.62 cfs Outflow=0.49 cfs 0.079 af

Reach FILTER STRIP 1A-3: FILTER Avg. Flow Depth=0.37' Max Vel=0.41 fps Inflow=4.05 cfs 0.344 af
n=0.400 L=177.0' S=0.0791 '/' Capacity=6.70 cfs Outflow=3.45 cfs 0.342 af

Reach FILTER STRIP 2A: FILTER STRIP Avg. Flow Depth=0.42' Max Vel=0.19 fps Inflow=3.48 cfs 0.289 af
n=0.400 L=106.0' S=0.0142 '/' Capacity=3.97 cfs Outflow=2.76 cfs 0.286 af

Reach Post: Post Inflow=20.75 cfs 3.203 af
Outflow=20.75 cfs 3.203 af

Reach Post East: Post East Inflow=12.56 cfs 1.459 af
Outflow=12.56 cfs 1.459 af

Reach Post West: Post West Pond Inflow=14.99 cfs 1.744 af
Outflow=14.99 cfs 1.744 af

Pond BASIN 1: BASIN 1 Peak Elev=267.64' Storage=1,041 cf Inflow=1.02 cfs 0.085 af
Discarded=0.06 cfs 0.028 af Primary=0.29 cfs 0.045 af Outflow=0.35 cfs 0.073 af

Pond BASIN 2: BASIN 2 Peak Elev=269.10' Storage=1,065 cf Inflow=0.90 cfs 0.086 af
Discarded=0.07 cfs 0.045 af Primary=0.43 cfs 0.025 af Outflow=0.50 cfs 0.070 af

Pond BASIN 3: BASIN 3 Peak Elev=269.25' Storage=660 cf Inflow=2.68 cfs 0.211 af
Discarded=0.02 cfs 0.008 af Primary=2.58 cfs 0.202 af Outflow=2.60 cfs 0.210 af

Pond BASIN 4: BASIN 4 Peak Elev=270.42' Storage=4,668 cf Inflow=6.01 cfs 0.450 af
Discarded=0.22 cfs 0.091 af Primary=0.56 cfs 0.220 af Secondary=3.49 cfs 0.125 af Outflow=4.27 cfs 0.435 af

Pond CB P1: CB P1 Peak Elev=278.81' Inflow=4.19 cfs 0.364 af
12.0" Round Culvert n=0.012 L=10.0' S=0.0100 '/' Outflow=4.19 cfs 0.364 af

Pond CB P2: CB P2 Peak Elev=277.61' Inflow=0.51 cfs 0.040 af
12.0" Round Culvert n=0.012 L=10.0' S=0.0100 '/' Outflow=0.51 cfs 0.040 af

Pond CB P3: CB P3 Peak Elev=273.70' Inflow=0.50 cfs 0.035 af
12.0" Round Culvert n=0.012 L=27.0' S=0.0056 '/' Outflow=0.50 cfs 0.035 af

Pond CB P4: CB P4 Peak Elev=266.14' Inflow=0.89 cfs 0.080 af
12.0" Round Culvert n=0.013 L=10.0' S=0.0100 '/' Outflow=0.89 cfs 0.080 af

Pond CB P5: CB P5 Peak Elev=267.29' Inflow=0.72 cfs 0.054 af
12.0" Round Culvert n=0.012 L=10.0' S=0.0100 '/' Outflow=0.72 cfs 0.054 af

Pond CB P7: CB P7 Peak Elev=270.56' Inflow=2.40 cfs 0.176 af
12.0" Round Culvert n=0.012 L=30.0' S=0.0050 '/' Outflow=2.40 cfs 0.176 af

Pond DMH P1: DMH P1 Peak Elev=277.61' Inflow=4.55 cfs 0.404 af
15.0" Round Culvert n=0.012 L=220.0' S=0.0155 '/' Outflow=4.55 cfs 0.404 af

Pond DMH P2: DMH P2 Peak Elev=273.69' Inflow=4.98 cfs 0.439 af
Primary=3.63 cfs 0.399 af Secondary=1.33 cfs 0.041 af Outflow=4.98 cfs 0.439 af

Pond DMH P6: DMH P6 Peak Elev=273.17' Inflow=1.33 cfs 0.046 af
15.0" Round Culvert n=0.012 L=110.0' S=0.0050 '/' Outflow=1.33 cfs 0.046 af

Pond House Infiltration: House Infiltration Peak Elev=271.10' Storage=403 cf Inflow=0.21 cfs 0.016 af
Outflow=0.01 cfs 0.008 af

Pond Pipe Infil: Pipe Infiltration Peak Elev=273.10' Storage=9,702 cf Inflow=3.63 cfs 0.399 af
Discarded=0.26 cfs 0.191 af Secondary=0.05 cfs 0.005 af Outflow=0.31 cfs 0.196 af

Pond Post Existing Pond: Existing Pond Peak Elev=263.35' Storage=56,280 cf Inflow=20.89 cfs 1.844 af
Outflow=1.85 cfs 0.584 af

Pond Stormceptor 1: Stormceptor 1 Peak Elev=265.98' Inflow=1.06 cfs 0.125 af
12.0" Round Culvert n=0.013 L=70.0' S=0.0050 '/' Outflow=1.06 cfs 0.125 af

Pond Stormceptor 2: Stormceptor 2 Peak Elev=267.03' Inflow=0.72 cfs 0.079 af
12.0" Round Culvert n=0.012 L=40.0' S=0.0150 '/' Outflow=0.72 cfs 0.079 af

Pond Stormceptor 3: Stormceptor 3 Peak Elev=268.13' Inflow=3.48 cfs 0.289 af
12.0" Round Culvert n=0.012 L=20.0' S=0.0050 '/' Outflow=3.48 cfs 0.289 af

Pond Stormceptor 4: Stormceptor 4 Peak Elev=268.43' Inflow=4.05 cfs 0.344 af
12.0" Round Culvert n=0.012 L=40.0' S=0.0150 '/' Outflow=4.05 cfs 0.344 af

Total Runoff Area = 44.572 ac Runoff Volume = 5.095 af Average Runoff Depth = 1.37"
85.95% Pervious = 38.311 ac 14.05% Impervious = 6.261 ac

Summary for Subcatchment House: House

Runoff = 0.21 cfs @ 12.09 hrs, Volume= 0.016 af, Depth> 4.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.60"

	Area (sf)	CN	Description
	2,100	98	Unconnected pavement, HSG A
*	0	98	Unconnected pavement, HSG B
	0	98	Unconnected pavement, HSG C
	0	98	Unconnected pavement, HSG D
	0	32	Woods/grass comb., Good, HSG A
	0	39	>75% Grass cover, Good, HSG A
	0	58	Woods/grass comb., Good, HSG B
	0	61	>75% Grass cover, Good, HSG B
	0	72	Woods/grass comb., Good, HSG C
	0	74	>75% Grass cover, Good, HSG C
	0	79	Woods/grass comb., Good, HSG D
	0	80	>75% Grass cover, Good, HSG D
	2,100	98	Weighted Average
	2,100	98	100.00% Impervious Area
	2,100		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	30	0.3000	3.01		**Lag/CN Method, Houses**
0.2	30	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment Post 1a: Post 1a

Runoff = 10.13 cfs @ 12.36 hrs, Volume= 1.177 af, Depth> 0.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.60"

Area (sf)	CN	Adj	Description
3,833	98		Unconnected pavement, HSG A
66,078	98		Unconnected pavement, HSG B
6,212	98		Unconnected pavement, HSG C
0	98		Unconnected pavement, HSG D
46,666	32		Woods/grass comb., Good, HSG A
73,498	39		>75% Grass cover, Good, HSG A
153,778	58		Woods/grass comb., Good, HSG B
255,787	61		>75% Grass cover, Good, HSG B
61,008	72		Woods/grass comb., Good, HSG C
16,255	74		>75% Grass cover, Good, HSG C
0	79		Woods/grass comb., Good, HSG D
0	80		>75% Grass cover, Good, HSG D
683,115	61	59	Weighted Average, UI Adjusted
606,992	57	57	88.86% Pervious Area
76,123	98	98	11.14% Impervious Area
76,123			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.1	936	0.0530	0.71		**Lag/CN Method, Post 1a**

Summary for Subcatchment Post 1b: Post 1b

Runoff = 0.50 cfs @ 12.10 hrs, Volume= 0.035 af, Depth> 1.27"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.60"

Area (sf)	CN	Adj	Description
0	98		Unconnected pavement, HSG A
2,929	98		Unconnected pavement, HSG B
0	98		Unconnected pavement, HSG C
0	98		Unconnected pavement, HSG D
0	32		Woods/grass comb., Good, HSG A
0	39		>75% Grass cover, Good, HSG A
173	58		Woods/grass comb., Good, HSG B
11,525	61		>75% Grass cover, Good, HSG B
0	72		Woods/grass comb., Good, HSG C
0	74		>75% Grass cover, Good, HSG C
0	79		Woods/grass comb., Good, HSG D
0	80		>75% Grass cover, Good, HSG D
14,627	68	65	Weighted Average, UI Adjusted
11,698	61	61	79.98% Pervious Area
2,929	98	98	20.02% Impervious Area
2,929			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.6	269	0.0790	0.81		**Lag/CN Method, Post 1b**
5.6	269	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment Post 1c: Post 1c

Runoff = 0.89 cfs @ 12.22 hrs, Volume= 0.080 af, Depth> 1.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.60"

Area (sf)	CN	Adj	Description
1,896	98		Unconnected pavement, HSG A
6,747	98		Unconnected pavement, HSG B
0	98		Unconnected pavement, HSG C
0	98		Unconnected pavement, HSG D
0	32		Woods/grass comb., Good, HSG A
22	39		>75% Grass cover, Good, HSG A
106	58		Woods/grass comb., Good, HSG B
22,790	61		>75% Grass cover, Good, HSG B
0	72		Woods/grass comb., Good, HSG C
0	74		>75% Grass cover, Good, HSG C
0	79		Woods/grass comb., Good, HSG D
0	80		>75% Grass cover, Good, HSG D
31,561	71	66	Weighted Average, UI Adjusted
22,918	61	61	72.61% Pervious Area
8,643	98	98	27.39% Impervious Area
8,643			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	497	0.0270	0.58		**Lag/CN Method, Post 1c**

Summary for Subcatchment Post 1d: Post 1d

Runoff = 1.02 cfs @ 12.14 hrs, Volume= 0.085 af, Depth> 0.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.60"

Area (sf)	CN	Adj	Description
3,066	98		Unconnected pavement, HSG A
5,058	98		Unconnected pavement, HSG B
0	98		Unconnected pavement, HSG C
0	98		Unconnected pavement, HSG D
0	32		Woods/grass comb., Good, HSG A
11,103	39		>75% Grass cover, Good, HSG A
0	58		Woods/grass comb., Good, HSG B
29,804	61		>75% Grass cover, Good, HSG B
0	72		Woods/grass comb., Good, HSG C
0	74		>75% Grass cover, Good, HSG C
0	79		Woods/grass comb., Good, HSG D
0	80		>75% Grass cover, Good, HSG D
49,031	62	59	Weighted Average, UI Adjusted
40,907	55	55	83.43% Pervious Area
8,124	98	98	16.57% Impervious Area
8,124			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	285	0.0530	0.57		**Lag/CN Method, Post 1d**

Summary for Subcatchment Post 1e: Post 1e

Runoff = 0.72 cfs @ 12.11 hrs, Volume= 0.054 af, Depth> 3.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.60"

Area (sf)	CN	Description
2,800	98	Unconnected pavement, HSG A
4,424	98	Unconnected pavement, HSG B
0	98	Unconnected pavement, HSG C
0	98	Unconnected pavement, HSG D
0	32	Woods/grass comb., Good, HSG A
809	39	>75% Grass cover, Good, HSG A
0	58	Woods/grass comb., Good, HSG B
533	61	>75% Grass cover, Good, HSG B
0	72	Woods/grass comb., Good, HSG C
0	74	>75% Grass cover, Good, HSG C
0	79	Woods/grass comb., Good, HSG D
0	80	>75% Grass cover, Good, HSG D
8,566	90	Weighted Average
1,342	48	15.67% Pervious Area
7,224	98	84.33% Impervious Area
7,224		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.2	335	0.0130	0.68		**Lag/CN Method, Post 1e**

Summary for Subcatchment Post 1f: Post 1f

Runoff = 0.90 cfs @ 12.22 hrs, Volume= 0.086 af, Depth> 0.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.60"

Area (sf)	CN	Adj	Description
2,113	98		Unconnected pavement, HSG A
6,061	98		Unconnected pavement, HSG B
0	98		Unconnected pavement, HSG C
141	98		Unconnected pavement, HSG D
0	32		Woods/grass comb., Good, HSG A
9,211	39		>75% Grass cover, Good, HSG A
0	58		Woods/grass comb., Good, HSG B
28,313	61		>75% Grass cover, Good, HSG B
0	72		Woods/grass comb., Good, HSG C
0	74		>75% Grass cover, Good, HSG C
0	79		Woods/grass comb., Good, HSG D
821	80		>75% Grass cover, Good, HSG D
46,660	64	60	Weighted Average, UI Adjusted
38,345	56	56	82.18% Pervious Area
8,315	98	98	17.82% Impervious Area
8,315			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.8	456	0.0370	0.55		**Lag/CN Method, Post 1f**

Summary for Subcatchment Post 1g: Post 1g

Runoff = 2.40 cfs @ 12.12 hrs, Volume= 0.176 af, Depth> 2.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.60"

Area (sf)	CN	Description
0	98	Unconnected pavement, HSG A
10,112	98	Unconnected pavement, HSG B
0	98	Unconnected pavement, HSG C
6,606	98	Unconnected pavement, HSG D
0	32	Woods/grass comb., Good, HSG A
0	39	>75% Grass cover, Good, HSG A
0	58	Woods/grass comb., Good, HSG B
10,438	61	>75% Grass cover, Good, HSG B
0	72	Woods/grass comb., Good, HSG C
0	74	>75% Grass cover, Good, HSG C
0	79	Woods/grass comb., Good, HSG D
7,780	80	>75% Grass cover, Good, HSG D
34,936	83	Weighted Average
18,218	69	52.15% Pervious Area
16,718	98	47.85% Impervious Area
16,718		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.4	298	0.0170	0.59		**Lag/CN Method, Post 1g**

Summary for Subcatchment Post 1h: Post 1h

Runoff = 3.65 cfs @ 12.14 hrs, Volume= 0.274 af, Depth> 1.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.60"

Area (sf)	CN	Adj	Description
0	98		Unconnected pavement, HSG A
9,536	98		Unconnected pavement, HSG B
0	98		Unconnected pavement, HSG C
3,653	98		Unconnected pavement, HSG D
0	32		Woods/grass comb., Good, HSG A
0	39		>75% Grass cover, Good, HSG A
2,774	58		Woods/grass comb., Good, HSG B
29,588	61		>75% Grass cover, Good, HSG B
0	72		Woods/grass comb., Good, HSG C
0	74		>75% Grass cover, Good, HSG C
15,915	79		Woods/grass comb., Good, HSG D
17,291	80		>75% Grass cover, Good, HSG D
78,757	75	73	Weighted Average, UI Adjusted
65,568	70	70	83.25% Pervious Area
13,189	98	98	16.75% Impervious Area
13,189			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	454	0.0480	0.85		**Lag/CN Method, Post 1h**

Summary for Subcatchment Post 2a: Post 2a

Runoff = 17.10 cfs @ 12.21 hrs, Volume= 1.512 af, Depth> 1.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.60"

Area (sf)	CN	Adj	Description
0	98		Unconnected pavement, HSG A
29,899	98		Unconnected pavement, HSG B
0	98		Unconnected pavement, HSG C
35,948	98		Unconnected pavement, HSG D
0	32		Woods/grass comb., Good, HSG A
0	39		>75% Grass cover, Good, HSG A
175,494	58		Woods/grass comb., Good, HSG B
95,030	61		>75% Grass cover, Good, HSG B
0	72		Woods/grass comb., Good, HSG C
0	74		>75% Grass cover, Good, HSG C
85,803	79		Woods/grass comb., Good, HSG D
95,515	80		>75% Grass cover, Good, HSG D
517,689	71	69	Weighted Average, UI Adjusted
451,842	67	67	87.28% Pervious Area
65,847	98	98	12.72% Impervious Area
65,847			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.5	863	0.0640	0.99		**Lag/CN Method, Post 2a**

Summary for Subcatchment Post 2b: Post 2b

Runoff = 4.19 cfs @ 12.19 hrs, Volume= 0.364 af, Depth> 1.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.60"

Area (sf)	CN	Adj	Description
0	98		Unconnected pavement, HSG A
30,684	98		Unconnected pavement, HSG B
0	98		Unconnected pavement, HSG C
0	98		Unconnected pavement, HSG D
0	32		Woods/grass comb., Good, HSG A
0	39		>75% Grass cover, Good, HSG A
12,389	58		Woods/grass comb., Good, HSG B
115,353	61		>75% Grass cover, Good, HSG B
0	72		Woods/grass comb., Good, HSG C
0	74		>75% Grass cover, Good, HSG C
0	79		Woods/grass comb., Good, HSG D
0	80		>75% Grass cover, Good, HSG D
158,426	68	64	Weighted Average, UI Adjusted
127,742	61	61	80.63% Pervious Area
30,684	98	98	19.37% Impervious Area
30,684			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.1	634	0.0660	0.87		**Lag/CN Method, Post 2b**

Summary for Subcatchment Post 2c: Post 2c

Runoff = 0.51 cfs @ 12.10 hrs, Volume= 0.040 af, Depth> 4.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.60"

Area (sf)	CN	Description
0	98	Unconnected pavement, HSG A
5,166	98	Unconnected pavement, HSG B
0	98	Unconnected pavement, HSG C
0	98	Unconnected pavement, HSG D
0	32	Woods/grass comb., Good, HSG A
0	39	>75% Grass cover, Good, HSG A
0	58	Woods/grass comb., Good, HSG B
0	61	>75% Grass cover, Good, HSG B
0	72	Woods/grass comb., Good, HSG C
0	74	>75% Grass cover, Good, HSG C
0	79	Woods/grass comb., Good, HSG D
0	80	>75% Grass cover, Good, HSG D
5,166	98	Weighted Average
5,166	98	100.00% Impervious Area
5,166		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	431	0.0120	1.02		**Lag/CN Method, Post 2c**

Summary for Subcatchment Post 2d: Post 2d

Runoff = 1.10 cfs @ 12.10 hrs, Volume= 0.087 af, Depth> 3.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.60"

Area (sf)	CN	Description
0	98	Unconnected pavement, HSG A
3,797	98	Unconnected pavement, HSG B
0	98	Unconnected pavement, HSG C
6,862	98	Unconnected pavement, HSG D
0	32	Woods/grass comb., Good, HSG A
0	39	>75% Grass cover, Good, HSG A
0	58	Woods/grass comb., Good, HSG B
0	61	>75% Grass cover, Good, HSG B
0	72	Woods/grass comb., Good, HSG C
0	74	>75% Grass cover, Good, HSG C
0	79	Woods/grass comb., Good, HSG D
824	80	>75% Grass cover, Good, HSG D
11,483	97	Weighted Average
824	80	7.18% Pervious Area
10,659	98	92.82% Impervious Area
10,659		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	636	0.0220	1.41		**Lag/CN Method, Post 2d**

Summary for Subcatchment Post 2e: Post 2e

Runoff = 2.68 cfs @ 12.16 hrs, Volume= 0.211 af, Depth> 1.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.60"

Area (sf)	CN	Adj	Description
0	98		Unconnected pavement, HSG A
2,740	98		Unconnected pavement, HSG B
0	98		Unconnected pavement, HSG C
9,637	98		Unconnected pavement, HSG D
0	32		Woods/grass comb., Good, HSG A
0	39		>75% Grass cover, Good, HSG A
0	58		Woods/grass comb., Good, HSG B
17,999	61		>75% Grass cover, Good, HSG B
0	72		Woods/grass comb., Good, HSG C
0	74		>75% Grass cover, Good, HSG C
0	79		Woods/grass comb., Good, HSG D
25,750	80		>75% Grass cover, Good, HSG D
56,126	78	75	Weighted Average, UI Adjusted
43,749	72	72	77.95% Pervious Area
12,377	98	98	22.05% Impervious Area
12,377			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.0	487	0.0300	0.74		**Lag/CN Method, Post 2e**

Summary for Subcatchment Post 3: Post 3

Runoff = 12.56 cfs @ 12.11 hrs, Volume= 0.874 af, Depth> 1.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.60"

Area (sf)	CN	Description
0	98	Unconnected pavement, HSG A
2,674	98	Unconnected pavement, HSG B
0	98	Unconnected pavement, HSG C
0	98	Unconnected pavement, HSG D
0	32	Woods/grass comb., Good, HSG A
0	39	>75% Grass cover, Good, HSG A
43,841	58	Woods/grass comb., Good, HSG B
978	61	>75% Grass cover, Good, HSG B
0	72	Woods/grass comb., Good, HSG C
0	74	>75% Grass cover, Good, HSG C
167,870	79	Woods/grass comb., Good, HSG D
16,647	80	>75% Grass cover, Good, HSG D
232,010	75	Weighted Average
229,336	75	98.85% Pervious Area
2,674	98	1.15% Impervious Area
2,674		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.1	457	0.0780	1.08		**Lag/CN Method, Post 3a**

Summary for Subcatchment Post 4: Post 4

Runoff = 0.30 cfs @ 12.11 hrs, Volume= 0.022 af, Depth> 1.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.60"

Area (sf)	CN	Adj	Description
0	98		Unconnected pavement, HSG A
1,972	98		Unconnected pavement, HSG B
0	98		Unconnected pavement, HSG C
0	98		Unconnected pavement, HSG D
0	32		Woods/grass comb., Good, HSG A
0	39		>75% Grass cover, Good, HSG A
9,344	58		Woods/grass comb., Good, HSG B
0	61		>75% Grass cover, Good, HSG B
0	72		Woods/grass comb., Good, HSG C
0	74		>75% Grass cover, Good, HSG C
0	79		Woods/grass comb., Good, HSG D
0	80		>75% Grass cover, Good, HSG D
11,316	65	61	Weighted Average, UI Adjusted
9,344	58	58	82.57% Pervious Area
1,972	98	98	17.43% Impervious Area
1,972			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.4	103	0.0530	0.50		**Lag/CN Method, Post 4**
3.4	103	Total, Increased to minimum Tc = 6.0 min			

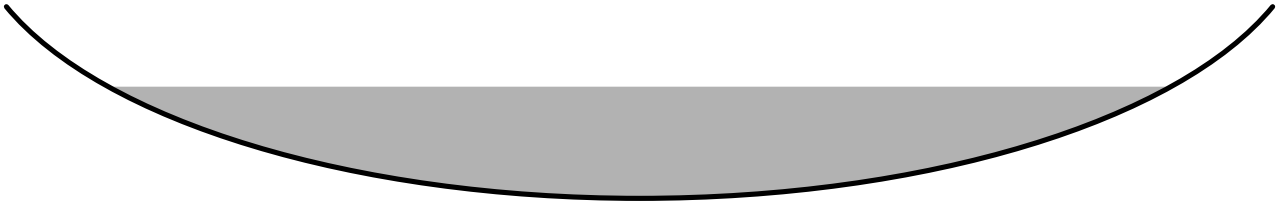
Summary for Reach FILTER STRIP 1A-1: FILTER STRIP 1A-1

Inflow Area = 1.850 ac, 20.80% Impervious, Inflow Depth > 0.81" for 10-YR event
Inflow = 1.06 cfs @ 12.26 hrs, Volume= 0.125 af
Outflow = 0.88 cfs @ 12.43 hrs, Volume= 0.124 af, Atten= 17%, Lag= 10.4 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.30 fps, Min. Travel Time= 10.9 min
Avg. Velocity = 0.15 fps, Avg. Travel Time= 21.2 min

Peak Storage= 575 cf @ 12.43 hrs
Average Depth at Peak Storage= 0.29'
Bank-Full Depth= 0.50' Flow Area= 6.7 sf, Capacity= 2.83 cfs

20.00' x 0.50' deep Parabolic Channel, n= 0.400 Sheet flow: Woods+light brush
Length= 194.0' Slope= 0.0567 '/'
Inlet Invert= 265.00', Outlet Invert= 254.00'



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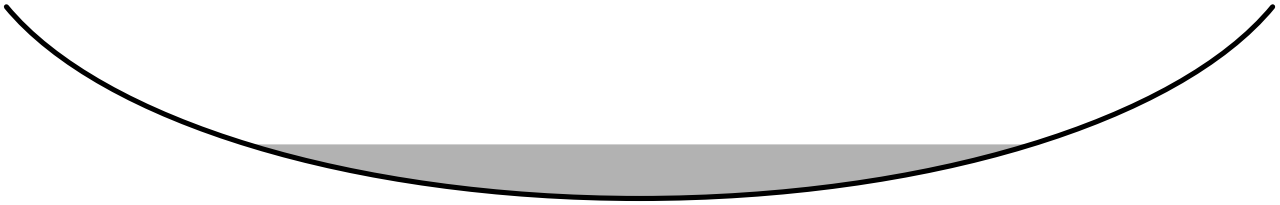
Summary for Reach FILTER STRIP 1A-2: FILTER STRIP 1A-2

Inflow Area = 1.268 ac, 28.14% Impervious, Inflow Depth > 0.75" for 10-YR event
Inflow = 0.72 cfs @ 12.11 hrs, Volume= 0.079 af
Outflow = 0.49 cfs @ 12.62 hrs, Volume= 0.079 af, Atten= 31%, Lag= 30.5 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.21 fps, Min. Travel Time= 16.1 min
Avg. Velocity = 0.09 fps, Avg. Travel Time= 38.1 min

Peak Storage= 476 cf @ 12.62 hrs
Average Depth at Peak Storage= 0.14'
Bank-Full Depth= 0.50' Flow Area= 15.7 sf, Capacity= 7.62 cfs

47.00' x 0.50' deep Parabolic Channel, n= 0.400 Sheet flow: Woods+light brush
Length= 202.0' Slope= 0.0743 '/'
Inlet Invert= 266.00', Outlet Invert= 251.00'



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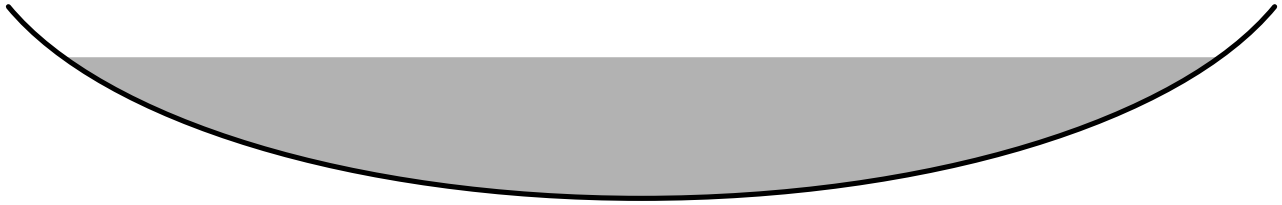
Summary for Reach FILTER STRIP 1A-3: FILTER STRIP 1A-2

Inflow Area = 2.610 ac, 26.31% Impervious, Inflow Depth > 1.58" for 10-YR event
Inflow = 4.05 cfs @ 12.25 hrs, Volume= 0.344 af
Outflow = 3.45 cfs @ 12.36 hrs, Volume= 0.342 af, Atten= 15%, Lag= 6.9 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.41 fps, Min. Travel Time= 7.2 min
Avg. Velocity = 0.19 fps, Avg. Travel Time= 15.1 min

Peak Storage= 1,490 cf @ 12.36 hrs
Average Depth at Peak Storage= 0.37'
Bank-Full Depth= 0.50' Flow Area= 13.3 sf, Capacity= 6.70 cfs

40.00' x 0.50' deep Parabolic Channel, n= 0.400 Sheet flow: Woods+light brush
Length= 177.0' Slope= 0.0791 '/'
Inlet Invert= 267.00', Outlet Invert= 253.00'



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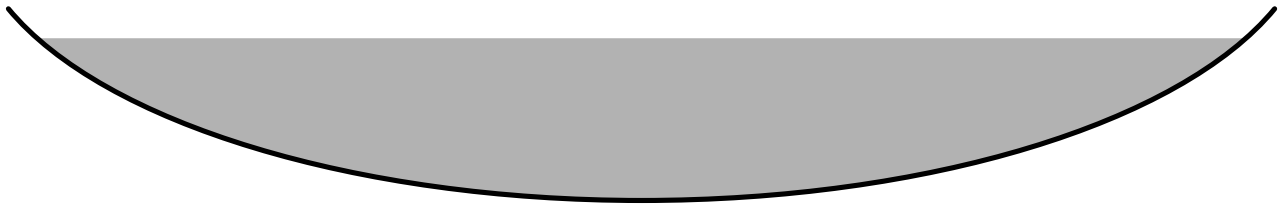
Summary for Reach FILTER STRIP 2A: FILTER STRIP 2A

Inflow Area = 1.552 ac, 34.07% Impervious, Inflow Depth > 2.24" for 10-YR event
Inflow = 3.48 cfs @ 12.17 hrs, Volume= 0.289 af
Outflow = 2.76 cfs @ 12.27 hrs, Volume= 0.286 af, Atten= 21%, Lag= 6.4 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.19 fps, Min. Travel Time= 9.3 min
Avg. Velocity = 0.07 fps, Avg. Travel Time= 24.7 min

Peak Storage= 1,540 cf @ 12.27 hrs
Average Depth at Peak Storage= 0.42'
Bank-Full Depth= 0.50' Flow Area= 18.7 sf, Capacity= 3.97 cfs

56.00' x 0.50' deep Parabolic Channel, n= 0.400 Sheet flow: Woods+light brush
Length= 106.0' Slope= 0.0142 '/'
Inlet Invert= 266.00', Outlet Invert= 264.50'



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Summary for Reach Post: Post

Inflow Area = 44.524 ac, 13.95% Impervious, Inflow Depth > 0.86" for 10-YR event
Inflow = 20.75 cfs @ 12.32 hrs, Volume= 3.203 af
Outflow = 20.75 cfs @ 12.32 hrs, Volume= 3.203 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Reach Post East: Post East

Inflow Area = 22.854 ac, 13.09% Impervious, Inflow Depth > 0.77" for 10-YR event
Inflow = 12.56 cfs @ 12.11 hrs, Volume= 1.459 af
Outflow = 12.56 cfs @ 12.11 hrs, Volume= 1.459 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Reach Post West: Post West Pond

Inflow Area = 21.670 ac, 14.86% Impervious, Inflow Depth > 0.97" for 10-YR event
Inflow = 14.99 cfs @ 12.36 hrs, Volume= 1.744 af
Outflow = 14.99 cfs @ 12.36 hrs, Volume= 1.744 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Pond BASIN 1: BASIN 1

Inflow Area = 1.126 ac, 16.57% Impervious, Inflow Depth > 0.91" for 10-YR event
Inflow = 1.02 cfs @ 12.14 hrs, Volume= 0.085 af
Outflow = 0.35 cfs @ 12.56 hrs, Volume= 0.073 af, Atten= 66%, Lag= 24.8 min
Discarded = 0.06 cfs @ 12.56 hrs, Volume= 0.028 af
Primary = 0.29 cfs @ 12.56 hrs, Volume= 0.045 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 267.64' @ 12.56 hrs Surf.Area= 1,085 sf Storage= 1,041 cf

Plug-Flow detention time= 75.4 min calculated for 0.073 af (86% of inflow)
Center-of-Mass det. time= 34.7 min (871.8 - 837.2)

Volume	Invert	Avail.Storage	Storage Description
#1	266.00'	2,116 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
266.00	358	0	0
267.00	624	491	491
268.00	1,341	983	1,474
268.40	1,873	643	2,116

Device	Routing	Invert	Outlet Devices
#1	Discarded	266.00'	**2.410 in/hr Exfiltration over Surface area**
#2	Primary	268.00'	**12.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Primary	267.00'	**4.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.06 cfs @ 12.56 hrs HW=267.64' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.06 cfs)

Primary OutFlow Max=0.29 cfs @ 12.56 hrs HW=267.64' TW=265.85' (Dynamic Tailwater)
├**2=Orifice/Grate** (Controls 0.00 cfs)
└**3=Orifice/Grate** (Orifice Controls 0.29 cfs @ 3.32 fps)

Summary for Pond BASIN 2: BASIN 2

Inflow Area = 1.071 ac, 17.82% Impervious, Inflow Depth > 0.96" for 10-YR event
Inflow = 0.90 cfs @ 12.22 hrs, Volume= 0.086 af
Outflow = 0.50 cfs @ 12.54 hrs, Volume= 0.070 af, Atten= 44%, Lag= 19.3 min
Discarded = 0.07 cfs @ 12.54 hrs, Volume= 0.045 af
Primary = 0.43 cfs @ 12.54 hrs, Volume= 0.025 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 269.10' @ 12.54 hrs Surf.Area= 1,329 sf Storage= 1,065 cf

Plug-Flow detention time= 108.3 min calculated for 0.070 af (82% of inflow)
Center-of-Mass det. time= 58.1 min (896.8 - 838.7)

Volume	Invert	Avail.Storage	Storage Description
#1	268.00'	2,728 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
268.00	660	0	0
269.00	1,207	934	934
270.00	2,382	1,795	2,728

Device	Routing	Invert	Outlet Devices
#1	Discarded	268.00'	**2.410 in/hr Exfiltration over Surface area**
#2	Primary	269.00'	**15.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.07 cfs @ 12.54 hrs HW=269.10' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.07 cfs)

Primary OutFlow Max=0.43 cfs @ 12.54 hrs HW=269.10' TW=266.99' (Dynamic Tailwater)
↑—**2=Orifice/Grate** (Weir Controls 0.43 cfs @ 1.05 fps)

Summary for Pond BASIN 3: BASIN 3

Inflow Area = 1.288 ac, 22.05% Impervious, Inflow Depth > 1.97" for 10-YR event
Inflow = 2.68 cfs @ 12.16 hrs, Volume= 0.211 af
Outflow = 2.60 cfs @ 12.19 hrs, Volume= 0.210 af, Atten= 3%, Lag= 1.8 min
Discarded = 0.02 cfs @ 12.19 hrs, Volume= 0.008 af
Primary = 2.58 cfs @ 12.19 hrs, Volume= 0.202 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 269.25' @ 12.19 hrs Surf.Area= 915 sf Storage= 660 cf

Plug-Flow detention time= 7.4 min calculated for 0.209 af (99% of inflow)
Center-of-Mass det. time= 5.5 min (810.1 - 804.6)

Volume	Invert	Avail.Storage	Storage Description
#1	268.00'	921 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
268.00	309	0	0
269.00	621	465	465
269.50	1,202	456	921

Device	Routing	Invert	Outlet Devices
#1	Discarded	268.00'	**1.000 in/hr Exfiltration over Surface area**
#2	Primary	269.00'	**15.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Primary	268.00'	**6.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.02 cfs @ 12.19 hrs HW=269.25' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=2.55 cfs @ 12.19 hrs HW=269.25' TW=268.08' (Dynamic Tailwater)
├**2=Orifice/Grate** (Weir Controls 1.61 cfs @ 1.64 fps)
└**3=Orifice/Grate** (Orifice Controls 0.95 cfs @ 4.82 fps)

Summary for Pond BASIN 4: BASIN 4

Inflow Area = 2.610 ac, 26.31% Impervious, Inflow Depth > 2.07" for 10-YR event
Inflow = 6.01 cfs @ 12.13 hrs, Volume= 0.450 af
Outflow = 4.27 cfs @ 12.25 hrs, Volume= 0.435 af, Atten= 29%, Lag= 7.2 min
Discarded = 0.22 cfs @ 12.25 hrs, Volume= 0.091 af
Primary = 0.56 cfs @ 12.25 hrs, Volume= 0.220 af
Secondary = 3.49 cfs @ 12.25 hrs, Volume= 0.125 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 270.42' @ 12.25 hrs Surf.Area= 3,932 sf Storage= 4,668 cf

Plug-Flow detention time= 49.0 min calculated for 0.434 af (96% of inflow)
Center-of-Mass det. time= 37.2 min (835.6 - 798.4)

Volume	Invert	Avail.Storage	Storage Description
#1	268.00'	7,263 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
268.00	746	0	0
269.00	1,234	990	990
270.00	3,149	2,192	3,182
271.00	5,014	4,082	7,263

Device	Routing	Invert	Outlet Devices
#1	Discarded	268.00'	**2.410 in/hr Exfiltration over Surface area**
#2	Secondary	270.00'	**15.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

#3 Primary 268.50' **4.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.22 cfs @ 12.25 hrs HW=270.42' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.22 cfs)

Primary OutFlow Max=0.56 cfs @ 12.25 hrs HW=270.42' TW=268.41' (Dynamic Tailwater)
3=Orifice/Grate (Orifice Controls 0.56 cfs @ 6.37 fps)

Secondary OutFlow Max=3.49 cfs @ 12.25 hrs HW=270.42' TW=268.41' (Dynamic Tailwater)
2=Orifice/Grate (Weir Controls 3.49 cfs @ 2.12 fps)

Summary for Pond CB P1: CB P1

Inflow Area = 3.637 ac, 19.37% Impervious, Inflow Depth > 1.20" for 10-YR event
Inflow = 4.19 cfs @ 12.19 hrs, Volume= 0.364 af
Outflow = 4.19 cfs @ 12.19 hrs, Volume= 0.364 af, Atten= 0%, Lag= 0.0 min
Primary = 4.19 cfs @ 12.19 hrs, Volume= 0.364 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 278.81' @ 12.20 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	276.60'	**12.0" Round 12" Culvert** L= 10.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 276.60' / 276.50' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=4.07 cfs @ 12.19 hrs HW=278.75' TW=277.60' (Dynamic Tailwater)
1=12" Culvert (Inlet Controls 4.07 cfs @ 5.18 fps)

Summary for Pond CB P2: CB P2

Inflow Area = 0.119 ac,100.00% Impervious, Inflow Depth > 4.05" for 10-YR event
Inflow = 0.51 cfs @ 12.10 hrs, Volume= 0.040 af
Outflow = 0.51 cfs @ 12.10 hrs, Volume= 0.040 af, Atten= 0%, Lag= 0.0 min
Primary = 0.51 cfs @ 12.10 hrs, Volume= 0.040 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 277.61' @ 12.23 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	276.60'	**12.0" Round 12" Culvert** L= 10.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 276.60' / 276.50' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 12.10 hrs HW=277.26' TW=277.42' (Dynamic Tailwater)
1=12" Culvert (Controls 0.00 cfs)

Summary for Pond CB P3: CB P3

Inflow Area = 0.336 ac, 20.02% Impervious, Inflow Depth > 1.27" for 10-YR event
Inflow = 0.50 cfs @ 12.10 hrs, Volume= 0.035 af
Outflow = 0.50 cfs @ 12.10 hrs, Volume= 0.035 af, Atten= 0%, Lag= 0.0 min
Primary = 0.50 cfs @ 12.10 hrs, Volume= 0.035 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 273.70' @ 12.22 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	272.75'	**12.0" Round 12" Culvert** L= 27.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 272.75' / 272.60' S= 0.0056 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 12.10 hrs HW=273.47' TW=273.59' (Dynamic Tailwater)
1=12" Culvert (Controls 0.00 cfs)

Summary for Pond CB P4: CB P4

Inflow Area = 0.725 ac, 27.39% Impervious, Inflow Depth > 1.33" for 10-YR event
Inflow = 0.89 cfs @ 12.22 hrs, Volume= 0.080 af
Outflow = 0.89 cfs @ 12.22 hrs, Volume= 0.080 af, Atten= 0%, Lag= 0.0 min
Primary = 0.89 cfs @ 12.22 hrs, Volume= 0.080 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 266.14' @ 12.27 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	265.55'	**12.0" Round Culvert** L= 10.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 265.55' / 265.45' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=0.76 cfs @ 12.22 hrs HW=266.12' TW=265.96' (Dynamic Tailwater)
1=Culvert (Outlet Controls 0.76 cfs @ 2.36 fps)

Summary for Pond CB P5: CB P5

Inflow Area = 0.197 ac, 84.33% Impervious, Inflow Depth > 3.30" for 10-YR event
Inflow = 0.72 cfs @ 12.11 hrs, Volume= 0.054 af
Outflow = 0.72 cfs @ 12.11 hrs, Volume= 0.054 af, Atten= 0%, Lag= 0.0 min
Primary = 0.72 cfs @ 12.11 hrs, Volume= 0.054 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 267.29' @ 12.11 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	266.80'	**12.0" Round 12" Culvert** L= 10.0' CPP, square edge headwall, Ke= 0.500

Inlet / Outlet Invert= 266.80' / 266.70' S= 0.0100 '/' Cc= 0.900
n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.70 cfs @ 12.11 hrs HW=267.28' TW=267.02' (Dynamic Tailwater)
1=12" Culvert (Barrel Controls 0.70 cfs @ 2.75 fps)

Summary for Pond CB P7: CB P7

Inflow Area = 0.802 ac, 47.85% Impervious, Inflow Depth > 2.63" for 10-YR event
Inflow = 2.40 cfs @ 12.12 hrs, Volume= 0.176 af
Outflow = 2.40 cfs @ 12.12 hrs, Volume= 0.176 af, Atten= 0%, Lag= 0.0 min
Primary = 2.40 cfs @ 12.12 hrs, Volume= 0.176 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 270.56' @ 12.23 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	267.80'	**12.0" Round 12" Culvert** L= 30.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 267.80' / 267.65' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.52 cfs @ 12.12 hrs HW=270.36' TW=270.20' (Dynamic Tailwater)
1=12" Culvert (Inlet Controls 1.52 cfs @ 1.93 fps)

Summary for Pond DMH P1: DMH P1

Inflow Area = 3.756 ac, 21.91% Impervious, Inflow Depth > 1.29" for 10-YR event
Inflow = 4.55 cfs @ 12.18 hrs, Volume= 0.404 af
Outflow = 4.55 cfs @ 12.18 hrs, Volume= 0.404 af, Atten= 0%, Lag= 0.0 min
Primary = 4.55 cfs @ 12.18 hrs, Volume= 0.404 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 277.61' @ 12.18 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	276.40'	**15.0" Round 15" Culvert** L= 220.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 276.40' / 273.00' S= 0.0155 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=4.49 cfs @ 12.18 hrs HW=277.59' TW=273.68' (Dynamic Tailwater)
1=15" Culvert (Inlet Controls 4.49 cfs @ 3.72 fps)

Summary for Pond DMH P2: DMH P2

Inflow Area = 4.091 ac, 21.76% Impervious, Inflow Depth > 1.29" for 10-YR event
Inflow = 4.98 cfs @ 12.17 hrs, Volume= 0.439 af
Outflow = 4.98 cfs @ 12.17 hrs, Volume= 0.439 af, Atten= 0%, Lag= 0.0 min
Primary = 3.63 cfs @ 12.18 hrs, Volume= 0.399 af
Secondary = 1.33 cfs @ 12.16 hrs, Volume= 0.041 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 273.69' @ 12.18 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	272.50'	**15.0" Round 15" Culvert** L= 40.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 272.50' / 272.30' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#2	Secondary	273.00'	**15.0" Round 15"Culvert** L= 140.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 273.00' / 272.00' S= 0.0071 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=3.60 cfs @ 12.18 hrs HW=273.68' TW=270.59' (Dynamic Tailwater)
1=15" Culvert (Barrel Controls 3.60 cfs @ 3.87 fps)

Secondary OutFlow Max=1.24 cfs @ 12.16 hrs HW=273.68' TW=273.16' (Dynamic Tailwater)
2=15"Culvert (Outlet Controls 1.24 cfs @ 2.63 fps)

Summary for Pond DMH P6: DMH P6

Inflow Area = 4.091 ac, 21.76% Impervious, Inflow Depth = 0.13" for 10-YR event
Inflow = 1.33 cfs @ 12.16 hrs, Volume= 0.046 af
Outflow = 1.33 cfs @ 12.16 hrs, Volume= 0.046 af, Atten= 0%, Lag= 0.0 min
Primary = 1.33 cfs @ 12.16 hrs, Volume= 0.046 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 273.17' @ 12.16 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	272.55'	**15.0" Round Culvert** L= 110.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 272.55' / 272.00' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=1.30 cfs @ 12.16 hrs HW=273.16' TW=262.43' (Dynamic Tailwater)
1=Culvert (Barrel Controls 1.30 cfs @ 3.19 fps)

Summary for Pond House Infiltration: House Infiltration

Inflow Area = 0.048 ac,100.00% Impervious, Inflow Depth > 4.05" for 10-YR event
Inflow = 0.21 cfs @ 12.09 hrs, Volume= 0.016 af
Outflow = 0.01 cfs @ 10.00 hrs, Volume= 0.008 af, Atten= 96%, Lag= 0.0 min
Discarded = 0.01 cfs @ 10.00 hrs, Volume= 0.008 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 271.10' @ 15.44 hrs Surf.Area= 323 sf Storage= 403 cf

Plug-Flow detention time= 156.3 min calculated for 0.008 af (51% of inflow)
Center-of-Mass det. time= 61.5 min (797.1 - 735.6)

Volume	Invert	Avail.Storage	Storage Description
#1	270.00'	373 cf	**ADS_StormTech SC-740** x 8 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 2 rows
#2	269.00'	368 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 1,292 cf Overall - 373 cf Embedded = 919 cf x 40.0% Voids
		741 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
269.00	323	0	0
273.00	323	1,292	1,292

Device	Routing	Invert	Outlet Devices
#1	Discarded	269.00'	**1.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.01 cfs @ 10.00 hrs HW=269.04' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Summary for Pond Pipe Infil: Pipe Infiltration

Inflow Area = 4.091 ac, 21.76% Impervious, Inflow Depth > 1.17" for 10-YR event
Inflow = 3.63 cfs @ 12.18 hrs, Volume= 0.399 af
Outflow = 0.31 cfs @ 15.68 hrs, Volume= 0.196 af, Atten= 92%, Lag= 210.3 min
Discarded = 0.26 cfs @ 11.85 hrs, Volume= 0.191 af
Secondary = 0.05 cfs @ 15.68 hrs, Volume= 0.005 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 273.10' @ 15.68 hrs Surf.Area= 4,588 sf Storage= 9,702 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 100.2 min (925.5 - 825.4)

Volume	Invert	Avail.Storage	Storage Description
#1	270.00'	5,089 cf	**36.0" Round Pipe Storage** x 6 Inside #2 L= 120.0'
#2	269.50'	5,305 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 18,352 cf Overall - 5,089 cf Embedded = 13,263 cf x 40.0% Voids
#3	270.00'	88 cf	**4.00'D x 7.00'H Vertical Cone/Cylinder** Impervious
		10,482 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
269.50	4,588	0	0
273.50	4,588	18,352	18,352

Device	Routing	Invert	Outlet Devices
#1	Discarded	269.50'	**2.410 in/hr Exfiltration over Surface area**
#2	Secondary	273.00'	**15.0" Round 15" Culvert**

L= 26.0' CPP, square edge headwall, Ke= 0.500
Inlet / Outlet Invert= 273.00' / 272.65' S= 0.0135 '/' Cc= 0.900
n= 0.012, Flow Area= 1.23 sf

Discarded OutFlow Max=0.26 cfs @ 11.85 hrs HW=269.62' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.26 cfs)

Secondary OutFlow Max=0.05 cfs @ 15.68 hrs HW=273.10' TW=272.71' (Dynamic Tailwater)
2=15" Culvert (Inlet Controls 0.05 cfs @ 1.08 fps)

Summary for Pond Post Existing Pond: Existing Pond

Inflow Area = 17.528 ac, 16.72% Impervious, Inflow Depth > 1.26" for 10-YR event
Inflow = 20.89 cfs @ 12.22 hrs, Volume= 1.844 af
Outflow = 1.85 cfs @ 14.51 hrs, Volume= 0.584 af, Atten= 91%, Lag= 137.8 min
Primary = 1.85 cfs @ 14.51 hrs, Volume= 0.584 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 263.35' @ 14.51 hrs Surf.Area= 51,948 sf Storage= 56,280 cf

Plug-Flow detention time= 258.0 min calculated for 0.582 af (32% of inflow)
Center-of-Mass det. time= 161.9 min (977.4 - 815.5)

Volume	Invert	Avail.Storage	Storage Description
#1	262.00'	64,223 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
262.00	31,406	0	0
263.50	54,224	64,223	64,223

Device	Routing	Invert	Outlet Devices
#1	Primary	263.30'	**70.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=1.85 cfs @ 14.51 hrs HW=263.35' TW=0.00' (Dynamic Tailwater)
1=Broad-Crested Rectangular Weir (Weir Controls 1.85 cfs @ 0.53 fps)

Summary for Pond Stormceptor 1: Stormceptor 1

Inflow Area = 1.850 ac, 20.80% Impervious, Inflow Depth > 0.81" for 10-YR event
Inflow = 1.06 cfs @ 12.26 hrs, Volume= 0.125 af
Outflow = 1.06 cfs @ 12.26 hrs, Volume= 0.125 af, Atten= 0%, Lag= 0.0 min
Primary = 1.06 cfs @ 12.26 hrs, Volume= 0.125 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Peak Elev= 265.98' @ 12.26 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	265.35'	**12.0" Round 12" Culvert** L= 70.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 265.35' / 265.00' S= 0.0050 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=1.05 cfs @ 12.26 hrs HW=265.97' TW=265.26' (Dynamic Tailwater)
↑—**1=12" Culvert** (Barrel Controls 1.05 cfs @ 2.92 fps)

Summary for Pond Stormceptor 2: Stormceptor 2

Inflow Area = 1.268 ac, 28.14% Impervious, Inflow Depth > 0.75" for 10-YR event
Inflow = 0.72 cfs @ 12.11 hrs, Volume= 0.079 af
Outflow = 0.72 cfs @ 12.11 hrs, Volume= 0.079 af, Atten= 0%, Lag= 0.0 min
Primary = 0.72 cfs @ 12.11 hrs, Volume= 0.079 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 267.03' @ 12.11 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	266.60'	**12.0" Round 12" Culvert** L= 40.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 266.60' / 266.00' S= 0.0150 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.70 cfs @ 12.11 hrs HW=267.02' TW=266.12' (Dynamic Tailwater)
↑—**1=12" Culvert** (Inlet Controls 0.70 cfs @ 2.21 fps)

Summary for Pond Stormceptor 3: Stormceptor 3

Inflow Area = 1.552 ac, 34.07% Impervious, Inflow Depth > 2.24" for 10-YR event
Inflow = 3.48 cfs @ 12.17 hrs, Volume= 0.289 af
Outflow = 3.48 cfs @ 12.17 hrs, Volume= 0.289 af, Atten= 0%, Lag= 0.0 min
Primary = 3.48 cfs @ 12.17 hrs, Volume= 0.289 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 268.13' @ 12.17 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	266.60'	**12.0" Round 12" Culvert** L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 266.60' / 266.50' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=3.41 cfs @ 12.17 hrs HW=268.10' TW=266.38' (Dynamic Tailwater)
↑—**1=12" Culvert** (Barrel Controls 3.41 cfs @ 4.34 fps)

Summary for Pond Stormceptor 4: Stormceptor 4

Inflow Area = 2.610 ac, 26.31% Impervious, Inflow Depth > 1.58" for 10-YR event
Inflow = 4.05 cfs @ 12.25 hrs, Volume= 0.344 af
Outflow = 4.05 cfs @ 12.25 hrs, Volume= 0.344 af, Atten= 0%, Lag= 0.0 min
Primary = 4.05 cfs @ 12.25 hrs, Volume= 0.344 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 268.43' @ 12.26 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	266.60'	**12.0" Round 12" Culvert** L= 40.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 266.60' / 266.00' S= 0.0150 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=3.94 cfs @ 12.25 hrs HW=268.41' TW=267.33' (Dynamic Tailwater)
↑—**1=12" Culvert** (Inlet Controls 3.94 cfs @ 5.02 fps)

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentHouse: House Runoff Area=2,100 sf 100.00% Impervious Runoff Depth>4.87"
Flow Length=30' Slope=0.3000 '/' Tc=6.0 min CN=98 Runoff=0.25 cfs 0.020 af

SubcatchmentPost 1a: Post 1a Runoff Area=683,115 sf 11.14% Impervious Runoff Depth>1.37"
Flow Length=936' Slope=0.0530 '/' Tc=22.1 min UI Adjusted CN=59 Runoff=16.44 cfs 1.794 af

SubcatchmentPost 1b: Post 1b Runoff Area=14,627 sf 20.02% Impervious Runoff Depth>1.83"
Flow Length=269' Slope=0.0790 '/' Tc=6.0 min UI Adjusted CN=65 Runoff=0.75 cfs 0.051 af

SubcatchmentPost 1c: Post 1c Runoff Area=31,561 sf 27.39% Impervious Runoff Depth>1.90"
Flow Length=497' Slope=0.0270 '/' Tc=14.4 min UI Adjusted CN=66 Runoff=1.31 cfs 0.115 af

SubcatchmentPost 1d: Post 1d Runoff Area=49,031 sf 16.57% Impervious Runoff Depth>1.38"
Flow Length=285' Slope=0.0530 '/' Tc=8.3 min UI Adjusted CN=59 Runoff=1.66 cfs 0.130 af

SubcatchmentPost 1e: Post 1e Runoff Area=8,566 sf 84.33% Impervious Runoff Depth>4.12"
Flow Length=335' Slope=0.0130 '/' Tc=8.2 min CN=90 Runoff=0.88 cfs 0.067 af

SubcatchmentPost 1f: Post 1f Runoff Area=46,660 sf 17.82% Impervious Runoff Depth>1.45"
Flow Length=456' Slope=0.0370 '/' Tc=13.8 min UI Adjusted CN=60 Runoff=1.44 cfs 0.129 af

SubcatchmentPost 1g: Post 1g Runoff Area=34,936 sf 47.85% Impervious Runoff Depth>3.41"
Flow Length=298' Slope=0.0170 '/' Tc=8.4 min CN=83 Runoff=3.08 cfs 0.228 af

SubcatchmentPost 1h: Post 1h Runoff Area=78,757 sf 16.75% Impervious Runoff Depth>2.48"
Flow Length=454' Slope=0.0480 '/' Tc=9.0 min UI Adjusted CN=73 Runoff=5.01 cfs 0.374 af

SubcatchmentPost 2a: Post 2a Runoff Area=517,689 sf 12.72% Impervious Runoff Depth>2.14"
Flow Length=863' Slope=0.0640 '/' Tc=14.5 min UI Adjusted CN=69 Runoff=24.32 cfs 2.120 af

SubcatchmentPost 2b: Post 2b Runoff Area=158,426 sf 19.37% Impervious Runoff Depth>1.75"
Flow Length=634' Slope=0.0660 '/' Tc=12.1 min UI Adjusted CN=64 Runoff=6.30 cfs 0.529 af

SubcatchmentPost 2c: Post 2c Runoff Area=5,166 sf 100.00% Impervious Runoff Depth>4.87"
Flow Length=431' Slope=0.0120 '/' Tc=7.0 min CN=98 Runoff=0.61 cfs 0.048 af

SubcatchmentPost 2d: Post 2d Runoff Area=11,483 sf 92.82% Impervious Runoff Depth>4.80"
Flow Length=636' Slope=0.0220 '/' Tc=7.5 min CN=97 Runoff=1.33 cfs 0.105 af

SubcatchmentPost 2e: Post 2e Runoff Area=56,126 sf 22.05% Impervious Runoff Depth>2.66"
Flow Length=487' Slope=0.0300 '/' Tc=11.0 min UI Adjusted CN=75 Runoff=3.63 cfs 0.285 af

SubcatchmentPost 3: Post 3 Runoff Area=232,010 sf 1.15% Impervious Runoff Depth>2.66"
Flow Length=457' Slope=0.0780 '/' Tc=7.1 min CN=75 Runoff=16.97 cfs 1.180 af

SubcatchmentPost 4: Post 4 Runoff Area=11,316 sf 17.43% Impervious Runoff Depth>1.53"
Flow Length=103' Slope=0.0530 '/' Tc=6.0 min UI Adjusted CN=61 Runoff=0.47 cfs 0.033 af

Reach FILTER STRIP 1A-1: FILTER Avg. Flow Depth=0.37' Max Vel=0.35 fps Inflow=1.64 cfs 0.199 af
n=0.400 L=194.0' S=0.0567 '/' Capacity=2.83 cfs Outflow=1.46 cfs 0.198 af

Reach FILTER STRIP 1A-2: FILTER Avg. Flow Depth=0.21' Max Vel=0.27 fps Inflow=1.44 cfs 0.130 af
n=0.400 L=202.0' S=0.0743 '/' Capacity=7.62 cfs Outflow=1.14 cfs 0.129 af

Reach FILTER STRIP 1A-3: FILTER Avg. Flow Depth=0.44' Max Vel=0.46 fps Inflow=5.28 cfs 0.482 af
n=0.400 L=177.0' S=0.0791 '/' Capacity=6.70 cfs Outflow=4.98 cfs 0.478 af

Reach FILTER STRIP 2A: FILTER STRIP Avg. Flow Depth=0.49' Max Vel=0.21 fps Inflow=4.56 cfs 0.380 af
n=0.400 L=106.0' S=0.0142 '/' Capacity=3.97 cfs Outflow=3.78 cfs 0.377 af

Reach Post: Post Inflow=31.70 cfs 5.257 af
Outflow=31.70 cfs 5.257 af

Reach Post East: Post East Inflow=16.97 cfs 2.625 af
Outflow=16.97 cfs 2.625 af

Reach Post West: Post West Pond Inflow=23.99 cfs 2.632 af
Outflow=23.99 cfs 2.632 af

Pond BASIN 1: BASIN 1 Peak Elev=268.09' Storage=1,595 cf Inflow=1.66 cfs 0.130 af
Discarded=0.08 cfs 0.032 af Primary=0.67 cfs 0.085 af Outflow=0.75 cfs 0.117 af

Pond BASIN 2: BASIN 2 Peak Elev=269.19' Storage=1,184 cf Inflow=1.44 cfs 0.129 af
Discarded=0.08 cfs 0.047 af Primary=1.06 cfs 0.063 af Outflow=1.14 cfs 0.110 af

Pond BASIN 3: BASIN 3 Peak Elev=269.34' Storage=748 cf Inflow=3.63 cfs 0.285 af
Discarded=0.02 cfs 0.009 af Primary=3.45 cfs 0.275 af Outflow=3.47 cfs 0.284 af

Pond BASIN 4: BASIN 4 Peak Elev=270.65' Storage=5,633 cf Inflow=8.03 cfs 0.602 af
Discarded=0.24 cfs 0.105 af Primary=0.58 cfs 0.262 af Secondary=4.77 cfs 0.220 af Outflow=5.52 cfs 0.586 af

Pond CB P1: CB P1 Peak Elev=281.03' Inflow=6.30 cfs 0.529 af
12.0" Round Culvert n=0.012 L=10.0' S=0.0100 '/' Outflow=6.30 cfs 0.529 af

Pond CB P2: CB P2 Peak Elev=278.35' Inflow=0.61 cfs 0.048 af
12.0" Round Culvert n=0.012 L=10.0' S=0.0100 '/' Outflow=0.61 cfs 0.048 af

Pond CB P3: CB P3 Peak Elev=274.02' Inflow=0.75 cfs 0.051 af
12.0" Round Culvert n=0.012 L=27.0' S=0.0056 '/' Outflow=0.75 cfs 0.051 af

Pond CB P4: CB P4 Peak Elev=266.35' Inflow=1.31 cfs 0.115 af
12.0" Round Culvert n=0.013 L=10.0' S=0.0100 '/' Outflow=1.31 cfs 0.115 af

Pond CB P5: CB P5 Peak Elev=267.35' Inflow=0.88 cfs 0.067 af
12.0" Round Culvert n=0.012 L=10.0' S=0.0100 '/' Outflow=0.88 cfs 0.067 af

Pond CB P7: CB P7 Peak Elev=271.02' Inflow=3.08 cfs 0.228 af
12.0" Round Culvert n=0.012 L=30.0' S=0.0050 '/' Outflow=3.08 cfs 0.228 af

Pond DMH P1: DMH P1 Peak Elev=278.34' Inflow=6.80 cfs 0.577 af
15.0" Round Culvert n=0.012 L=220.0' S=0.0155 '/' Outflow=6.80 cfs 0.577 af

Pond DMH P2: DMH P2 Peak Elev=274.00' Inflow=7.37 cfs 0.629 af
Primary=4.87 cfs 0.496 af Secondary=2.49 cfs 0.133 af Outflow=7.37 cfs 0.629 af

Pond DMH P6: DMH P6 Peak Elev=273.44' Inflow=2.49 cfs 0.213 af
15.0" Round Culvert n=0.012 L=110.0' S=0.0050 '/' Outflow=2.49 cfs 0.213 af

Pond House Infiltration: House Infiltration Peak Elev=271.62' Storage=521 cf Inflow=0.25 cfs 0.020 af
Outflow=0.01 cfs 0.009 af

Pond Pipe Infil: Pipe Infiltration Peak Elev=273.33' Storage=10,133 cf Inflow=4.87 cfs 0.496 af
Discarded=0.26 cfs 0.201 af Secondary=0.47 cfs 0.080 af Outflow=0.72 cfs 0.281 af

Pond Post Existing Pond: Existing Pond Peak Elev=263.42' Storage=59,871 cf Inflow=30.19 cfs 2.710 af
Outflow=6.71 cfs 1.444 af

Pond Stormceptor 1: Stormceptor 1 Peak Elev=266.17' Inflow=1.64 cfs 0.199 af
12.0" Round Culvert n=0.013 L=70.0' S=0.0050 '/' Outflow=1.64 cfs 0.199 af

Pond Stormceptor 2: Stormceptor 2 Peak Elev=267.24' Inflow=1.44 cfs 0.130 af
12.0" Round Culvert n=0.012 L=40.0' S=0.0150 '/' Outflow=1.44 cfs 0.130 af

Pond Stormceptor 3: Stormceptor 3 Peak Elev=268.56' Inflow=4.56 cfs 0.380 af
12.0" Round Culvert n=0.012 L=20.0' S=0.0050 '/' Outflow=4.56 cfs 0.380 af

Pond Stormceptor 4: Stormceptor 4 Peak Elev=269.33' Inflow=5.28 cfs 0.482 af
12.0" Round Culvert n=0.012 L=40.0' S=0.0150 '/' Outflow=5.28 cfs 0.482 af

Total Runoff Area = 44.572 ac Runoff Volume = 7.209 af Average Runoff Depth = 1.94"
85.95% Pervious = 38.311 ac 14.05% Impervious = 6.261 ac

Summary for Subcatchment House: House

Runoff = 0.25 cfs @ 12.09 hrs, Volume= 0.020 af, Depth> 4.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.50"

	Area (sf)	CN	Description
	2,100	98	Unconnected pavement, HSG A
*	0	98	Unconnected pavement, HSG B
	0	98	Unconnected pavement, HSG C
	0	98	Unconnected pavement, HSG D
	0	32	Woods/grass comb., Good, HSG A
	0	39	>75% Grass cover, Good, HSG A
	0	58	Woods/grass comb., Good, HSG B
	0	61	>75% Grass cover, Good, HSG B
	0	72	Woods/grass comb., Good, HSG C
	0	74	>75% Grass cover, Good, HSG C
	0	79	Woods/grass comb., Good, HSG D
	0	80	>75% Grass cover, Good, HSG D
	2,100	98	Weighted Average
	2,100	98	100.00% Impervious Area
	2,100		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	30	0.3000	3.01		**Lag/CN Method, Houses**
0.2	30	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment Post 1a: Post 1a

Runoff = 16.44 cfs @ 12.35 hrs, Volume= 1.794 af, Depth> 1.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.50"

Area (sf)	CN	Adj	Description
3,833	98		Unconnected pavement, HSG A
66,078	98		Unconnected pavement, HSG B
6,212	98		Unconnected pavement, HSG C
0	98		Unconnected pavement, HSG D
46,666	32		Woods/grass comb., Good, HSG A
73,498	39		>75% Grass cover, Good, HSG A
153,778	58		Woods/grass comb., Good, HSG B
255,787	61		>75% Grass cover, Good, HSG B
61,008	72		Woods/grass comb., Good, HSG C
16,255	74		>75% Grass cover, Good, HSG C
0	79		Woods/grass comb., Good, HSG D
0	80		>75% Grass cover, Good, HSG D
683,115	61	59	Weighted Average, UI Adjusted
606,992	57	57	88.86% Pervious Area
76,123	98	98	11.14% Impervious Area
76,123			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.1	936	0.0530	0.71		**Lag/CN Method, Post 1a**

Summary for Subcatchment Post 1b: Post 1b

Runoff = 0.75 cfs @ 12.10 hrs, Volume= 0.051 af, Depth> 1.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.50"

Area (sf)	CN	Adj	Description
0	98		Unconnected pavement, HSG A
2,929	98		Unconnected pavement, HSG B
0	98		Unconnected pavement, HSG C
0	98		Unconnected pavement, HSG D
0	32		Woods/grass comb., Good, HSG A
0	39		>75% Grass cover, Good, HSG A
173	58		Woods/grass comb., Good, HSG B
11,525	61		>75% Grass cover, Good, HSG B
0	72		Woods/grass comb., Good, HSG C
0	74		>75% Grass cover, Good, HSG C
0	79		Woods/grass comb., Good, HSG D
0	80		>75% Grass cover, Good, HSG D
14,627	68	65	Weighted Average, UI Adjusted
11,698	61	61	79.98% Pervious Area
2,929	98	98	20.02% Impervious Area
2,929			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.6	269	0.0790	0.81		**Lag/CN Method, Post 1b**
5.6	269	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment Post 1c: Post 1c

Runoff = 1.31 cfs @ 12.21 hrs, Volume= 0.115 af, Depth> 1.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.50"

Area (sf)	CN	Adj	Description
1,896	98		Unconnected pavement, HSG A
6,747	98		Unconnected pavement, HSG B
0	98		Unconnected pavement, HSG C
0	98		Unconnected pavement, HSG D
0	32		Woods/grass comb., Good, HSG A
22	39		>75% Grass cover, Good, HSG A
106	58		Woods/grass comb., Good, HSG B
22,790	61		>75% Grass cover, Good, HSG B
0	72		Woods/grass comb., Good, HSG C
0	74		>75% Grass cover, Good, HSG C
0	79		Woods/grass comb., Good, HSG D
0	80		>75% Grass cover, Good, HSG D
31,561	71	66	Weighted Average, UI Adjusted
22,918	61	61	72.61% Pervious Area
8,643	98	98	27.39% Impervious Area
8,643			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	497	0.0270	0.58		**Lag/CN Method, Post 1c**

Summary for Subcatchment Post 1d: Post 1d

Runoff = 1.66 cfs @ 12.14 hrs, Volume= 0.130 af, Depth> 1.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.50"

Area (sf)	CN	Adj	Description
3,066	98		Unconnected pavement, HSG A
5,058	98		Unconnected pavement, HSG B
0	98		Unconnected pavement, HSG C
0	98		Unconnected pavement, HSG D
0	32		Woods/grass comb., Good, HSG A
11,103	39		>75% Grass cover, Good, HSG A
0	58		Woods/grass comb., Good, HSG B
29,804	61		>75% Grass cover, Good, HSG B
0	72		Woods/grass comb., Good, HSG C
0	74		>75% Grass cover, Good, HSG C
0	79		Woods/grass comb., Good, HSG D
0	80		>75% Grass cover, Good, HSG D
49,031	62	59	Weighted Average, UI Adjusted
40,907	55	55	83.43% Pervious Area
8,124	98	98	16.57% Impervious Area
8,124			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	285	0.0530	0.57		**Lag/CN Method, Post 1d**

Summary for Subcatchment Post 1e: Post 1e

Runoff = 0.88 cfs @ 12.11 hrs, Volume= 0.067 af, Depth> 4.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.50"

Area (sf)	CN	Description
2,800	98	Unconnected pavement, HSG A
4,424	98	Unconnected pavement, HSG B
0	98	Unconnected pavement, HSG C
0	98	Unconnected pavement, HSG D
0	32	Woods/grass comb., Good, HSG A
809	39	>75% Grass cover, Good, HSG A
0	58	Woods/grass comb., Good, HSG B
533	61	>75% Grass cover, Good, HSG B
0	72	Woods/grass comb., Good, HSG C
0	74	>75% Grass cover, Good, HSG C
0	79	Woods/grass comb., Good, HSG D
0	80	>75% Grass cover, Good, HSG D
8,566	90	Weighted Average
1,342	48	15.67% Pervious Area
7,224	98	84.33% Impervious Area
7,224		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.2	335	0.0130	0.68		**Lag/CN Method, Post 1e**

Summary for Subcatchment Post 1f: Post 1f

Runoff = 1.44 cfs @ 12.21 hrs, Volume= 0.129 af, Depth> 1.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.50"

Area (sf)	CN	Adj	Description
2,113	98		Unconnected pavement, HSG A
6,061	98		Unconnected pavement, HSG B
0	98		Unconnected pavement, HSG C
141	98		Unconnected pavement, HSG D
0	32		Woods/grass comb., Good, HSG A
9,211	39		>75% Grass cover, Good, HSG A
0	58		Woods/grass comb., Good, HSG B
28,313	61		>75% Grass cover, Good, HSG B
0	72		Woods/grass comb., Good, HSG C
0	74		>75% Grass cover, Good, HSG C
0	79		Woods/grass comb., Good, HSG D
821	80		>75% Grass cover, Good, HSG D
46,660	64	60	Weighted Average, UI Adjusted
38,345	56	56	82.18% Pervious Area
8,315	98	98	17.82% Impervious Area
8,315			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.8	456	0.0370	0.55		**Lag/CN Method, Post 1f**

Summary for Subcatchment Post 1g: Post 1g

Runoff = 3.08 cfs @ 12.12 hrs, Volume= 0.228 af, Depth> 3.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.50"

Area (sf)	CN	Description
0	98	Unconnected pavement, HSG A
10,112	98	Unconnected pavement, HSG B
0	98	Unconnected pavement, HSG C
6,606	98	Unconnected pavement, HSG D
0	32	Woods/grass comb., Good, HSG A
0	39	>75% Grass cover, Good, HSG A
0	58	Woods/grass comb., Good, HSG B
10,438	61	>75% Grass cover, Good, HSG B
0	72	Woods/grass comb., Good, HSG C
0	74	>75% Grass cover, Good, HSG C
0	79	Woods/grass comb., Good, HSG D
7,780	80	>75% Grass cover, Good, HSG D
34,936	83	Weighted Average
18,218	69	52.15% Pervious Area
16,718	98	47.85% Impervious Area
16,718		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.4	298	0.0170	0.59		**Lag/CN Method, Post 1g**

Summary for Subcatchment Post 1h: Post 1h

Runoff = 5.01 cfs @ 12.13 hrs, Volume= 0.374 af, Depth> 2.48"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.50"

Area (sf)	CN	Adj	Description
0	98		Unconnected pavement, HSG A
9,536	98		Unconnected pavement, HSG B
0	98		Unconnected pavement, HSG C
3,653	98		Unconnected pavement, HSG D
0	32		Woods/grass comb., Good, HSG A
0	39		>75% Grass cover, Good, HSG A
2,774	58		Woods/grass comb., Good, HSG B
29,588	61		>75% Grass cover, Good, HSG B
0	72		Woods/grass comb., Good, HSG C
0	74		>75% Grass cover, Good, HSG C
15,915	79		Woods/grass comb., Good, HSG D
17,291	80		>75% Grass cover, Good, HSG D
78,757	75	73	Weighted Average, UI Adjusted
65,568	70	70	83.25% Pervious Area
13,189	98	98	16.75% Impervious Area
13,189			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	454	0.0480	0.85		**Lag/CN Method, Post 1h**

Summary for Subcatchment Post 2a: Post 2a

Runoff = 24.32 cfs @ 12.21 hrs, Volume= 2.120 af, Depth> 2.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.50"

Area (sf)	CN	Adj	Description
0	98		Unconnected pavement, HSG A
29,899	98		Unconnected pavement, HSG B
0	98		Unconnected pavement, HSG C
35,948	98		Unconnected pavement, HSG D
0	32		Woods/grass comb., Good, HSG A
0	39		>75% Grass cover, Good, HSG A
175,494	58		Woods/grass comb., Good, HSG B
95,030	61		>75% Grass cover, Good, HSG B
0	72		Woods/grass comb., Good, HSG C
0	74		>75% Grass cover, Good, HSG C
85,803	79		Woods/grass comb., Good, HSG D
95,515	80		>75% Grass cover, Good, HSG D
517,689	71	69	Weighted Average, UI Adjusted
451,842	67	67	87.28% Pervious Area
65,847	98	98	12.72% Impervious Area
65,847			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.5	863	0.0640	0.99		**Lag/CN Method, Post 2a**

Summary for Subcatchment Post 2b: Post 2b

Runoff = 6.30 cfs @ 12.18 hrs, Volume= 0.529 af, Depth> 1.75"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.50"

Area (sf)	CN	Adj	Description
0	98		Unconnected pavement, HSG A
30,684	98		Unconnected pavement, HSG B
0	98		Unconnected pavement, HSG C
0	98		Unconnected pavement, HSG D
0	32		Woods/grass comb., Good, HSG A
0	39		>75% Grass cover, Good, HSG A
12,389	58		Woods/grass comb., Good, HSG B
115,353	61		>75% Grass cover, Good, HSG B
0	72		Woods/grass comb., Good, HSG C
0	74		>75% Grass cover, Good, HSG C
0	79		Woods/grass comb., Good, HSG D
0	80		>75% Grass cover, Good, HSG D
158,426	68	64	Weighted Average, UI Adjusted
127,742	61	61	80.63% Pervious Area
30,684	98	98	19.37% Impervious Area
30,684			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.1	634	0.0660	0.87		**Lag/CN Method, Post 2b**

Summary for Subcatchment Post 2c: Post 2c

Runoff = 0.61 cfs @ 12.10 hrs, Volume= 0.048 af, Depth> 4.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.50"

Area (sf)	CN	Description
0	98	Unconnected pavement, HSG A
5,166	98	Unconnected pavement, HSG B
0	98	Unconnected pavement, HSG C
0	98	Unconnected pavement, HSG D
0	32	Woods/grass comb., Good, HSG A
0	39	>75% Grass cover, Good, HSG A
0	58	Woods/grass comb., Good, HSG B
0	61	>75% Grass cover, Good, HSG B
0	72	Woods/grass comb., Good, HSG C
0	74	>75% Grass cover, Good, HSG C
0	79	Woods/grass comb., Good, HSG D
0	80	>75% Grass cover, Good, HSG D
5,166	98	Weighted Average
5,166	98	100.00% Impervious Area
5,166		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	431	0.0120	1.02		**Lag/CN Method, Post 2c**

Summary for Subcatchment Post 2d: Post 2d

Runoff = 1.33 cfs @ 12.10 hrs, Volume= 0.105 af, Depth> 4.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.50"

Area (sf)	CN	Description
0	98	Unconnected pavement, HSG A
3,797	98	Unconnected pavement, HSG B
0	98	Unconnected pavement, HSG C
6,862	98	Unconnected pavement, HSG D
0	32	Woods/grass comb., Good, HSG A
0	39	>75% Grass cover, Good, HSG A
0	58	Woods/grass comb., Good, HSG B
0	61	>75% Grass cover, Good, HSG B
0	72	Woods/grass comb., Good, HSG C
0	74	>75% Grass cover, Good, HSG C
0	79	Woods/grass comb., Good, HSG D
824	80	>75% Grass cover, Good, HSG D
11,483	97	Weighted Average
824	80	7.18% Pervious Area
10,659	98	92.82% Impervious Area
10,659		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	636	0.0220	1.41		**Lag/CN Method, Post 2d**

Summary for Subcatchment Post 2e: Post 2e

Runoff = 3.63 cfs @ 12.16 hrs, Volume= 0.285 af, Depth> 2.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.50"

Area (sf)	CN	Adj	Description
0	98		Unconnected pavement, HSG A
2,740	98		Unconnected pavement, HSG B
0	98		Unconnected pavement, HSG C
9,637	98		Unconnected pavement, HSG D
0	32		Woods/grass comb., Good, HSG A
0	39		>75% Grass cover, Good, HSG A
0	58		Woods/grass comb., Good, HSG B
17,999	61		>75% Grass cover, Good, HSG B
0	72		Woods/grass comb., Good, HSG C
0	74		>75% Grass cover, Good, HSG C
0	79		Woods/grass comb., Good, HSG D
25,750	80		>75% Grass cover, Good, HSG D
56,126	78	75	Weighted Average, UI Adjusted
43,749	72	72	77.95% Pervious Area
12,377	98	98	22.05% Impervious Area
12,377			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.0	487	0.0300	0.74		**Lag/CN Method, Post 2e**

Summary for Subcatchment Post 3: Post 3

Runoff = 16.97 cfs @ 12.11 hrs, Volume= 1.180 af, Depth> 2.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.50"

Area (sf)	CN	Description
0	98	Unconnected pavement, HSG A
2,674	98	Unconnected pavement, HSG B
0	98	Unconnected pavement, HSG C
0	98	Unconnected pavement, HSG D
0	32	Woods/grass comb., Good, HSG A
0	39	>75% Grass cover, Good, HSG A
43,841	58	Woods/grass comb., Good, HSG B
978	61	>75% Grass cover, Good, HSG B
0	72	Woods/grass comb., Good, HSG C
0	74	>75% Grass cover, Good, HSG C
167,870	79	Woods/grass comb., Good, HSG D
16,647	80	>75% Grass cover, Good, HSG D
232,010	75	Weighted Average
229,336	75	98.85% Pervious Area
2,674	98	1.15% Impervious Area
2,674		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.1	457	0.0780	1.08		**Lag/CN Method, Post 3a**

Summary for Subcatchment Post 4: Post 4

Runoff = 0.47 cfs @ 12.10 hrs, Volume= 0.033 af, Depth> 1.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.50"

Area (sf)	CN	Adj	Description
0	98		Unconnected pavement, HSG A
1,972	98		Unconnected pavement, HSG B
0	98		Unconnected pavement, HSG C
0	98		Unconnected pavement, HSG D
0	32		Woods/grass comb., Good, HSG A
0	39		>75% Grass cover, Good, HSG A
9,344	58		Woods/grass comb., Good, HSG B
0	61		>75% Grass cover, Good, HSG B
0	72		Woods/grass comb., Good, HSG C
0	74		>75% Grass cover, Good, HSG C
0	79		Woods/grass comb., Good, HSG D
0	80		>75% Grass cover, Good, HSG D
11,316	65	61	Weighted Average, UI Adjusted
9,344	58	58	82.57% Pervious Area
1,972	98	98	17.43% Impervious Area
1,972			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.4	103	0.0530	0.50		**Lag/CN Method, Post 4**
3.4	103	Total, Increased to minimum Tc = 6.0 min			

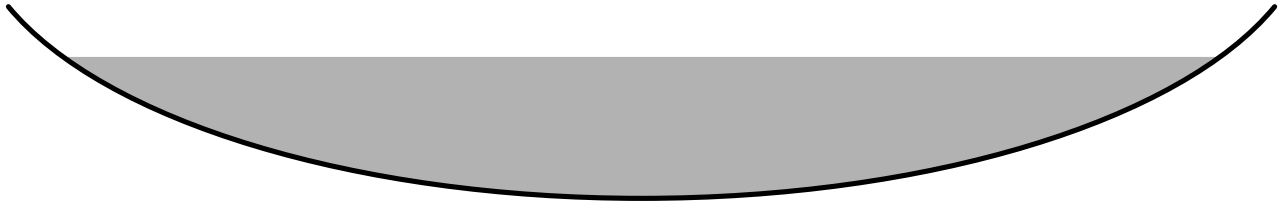
Summary for Reach FILTER STRIP 1A-1: FILTER STRIP 1A-1

Inflow Area = 1.850 ac, 20.80% Impervious, Inflow Depth > 1.29" for 25-YR event
Inflow = 1.64 cfs @ 12.22 hrs, Volume= 0.199 af
Outflow = 1.46 cfs @ 12.45 hrs, Volume= 0.198 af, Atten= 11%, Lag= 13.7 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.35 fps, Min. Travel Time= 9.3 min
Avg. Velocity = 0.17 fps, Avg. Travel Time= 19.0 min

Peak Storage= 819 cf @ 12.45 hrs
Average Depth at Peak Storage= 0.37'
Bank-Full Depth= 0.50' Flow Area= 6.7 sf, Capacity= 2.83 cfs

20.00' x 0.50' deep Parabolic Channel, n= 0.400 Sheet flow: Woods+light brush
Length= 194.0' Slope= 0.0567 '/'
Inlet Invert= 265.00', Outlet Invert= 254.00'



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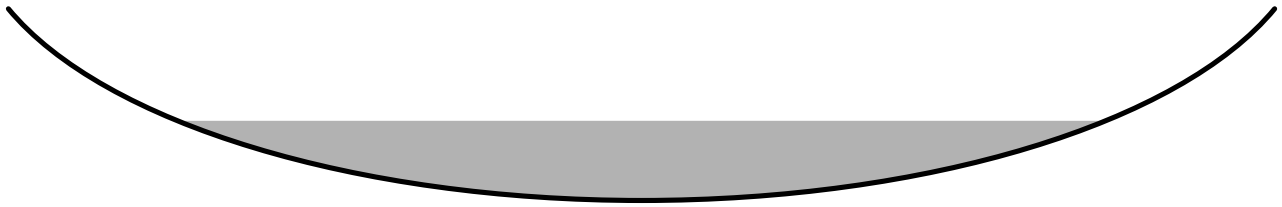
Summary for Reach FILTER STRIP 1A-2: FILTER STRIP 1A-2

Inflow Area = 1.268 ac, 28.14% Impervious, Inflow Depth > 1.23" for 25-YR event
Inflow = 1.44 cfs @ 12.34 hrs, Volume= 0.130 af
Outflow = 1.14 cfs @ 12.48 hrs, Volume= 0.129 af, Atten= 21%, Lag= 8.0 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.27 fps, Min. Travel Time= 12.4 min
Avg. Velocity = 0.10 fps, Avg. Travel Time= 33.3 min

Peak Storage= 850 cf @ 12.48 hrs
Average Depth at Peak Storage= 0.21'
Bank-Full Depth= 0.50' Flow Area= 15.7 sf, Capacity= 7.62 cfs

47.00' x 0.50' deep Parabolic Channel, n= 0.400 Sheet flow: Woods+light brush
Length= 202.0' Slope= 0.0743 '/'
Inlet Invert= 266.00', Outlet Invert= 251.00'



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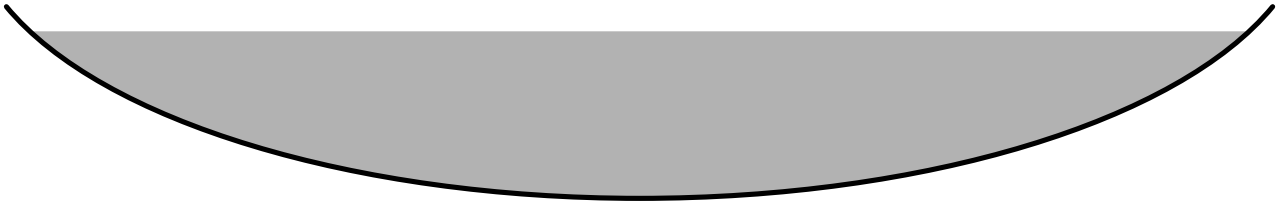
Summary for Reach FILTER STRIP 1A-3: FILTER STRIP 1A-2

Inflow Area = 2.610 ac, 26.31% Impervious, Inflow Depth > 2.21" for 25-YR event
Inflow = 5.28 cfs @ 12.24 hrs, Volume= 0.482 af
Outflow = 4.98 cfs @ 12.36 hrs, Volume= 0.478 af, Atten= 6%, Lag= 7.5 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.46 fps, Min. Travel Time= 6.4 min
Avg. Velocity = 0.21 fps, Avg. Travel Time= 14.1 min

Peak Storage= 1,923 cf @ 12.36 hrs
Average Depth at Peak Storage= 0.44'
Bank-Full Depth= 0.50' Flow Area= 13.3 sf, Capacity= 6.70 cfs

40.00' x 0.50' deep Parabolic Channel, n= 0.400 Sheet flow: Woods+light brush
Length= 177.0' Slope= 0.0791 '/'
Inlet Invert= 267.00', Outlet Invert= 253.00'



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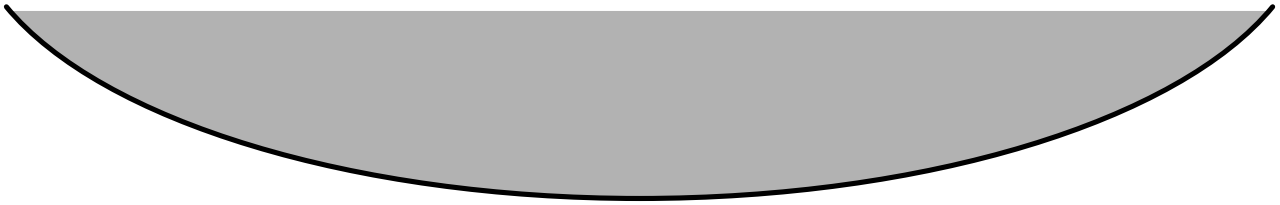
Summary for Reach FILTER STRIP 2A: FILTER STRIP 2A

Inflow Area = 1.552 ac, 34.07% Impervious, Inflow Depth > 2.94" for 25-YR event
Inflow = 4.56 cfs @ 12.16 hrs, Volume= 0.380 af
Outflow = 3.78 cfs @ 12.26 hrs, Volume= 0.377 af, Atten= 17%, Lag= 6.0 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.21 fps, Min. Travel Time= 8.4 min
Avg. Velocity = 0.08 fps, Avg. Travel Time= 22.6 min

Peak Storage= 1,916 cf @ 12.26 hrs
Average Depth at Peak Storage= 0.49'
Bank-Full Depth= 0.50' Flow Area= 18.7 sf, Capacity= 3.97 cfs

56.00' x 0.50' deep Parabolic Channel, n= 0.400 Sheet flow: Woods+light brush
Length= 106.0' Slope= 0.0142 '/'
Inlet Invert= 266.00', Outlet Invert= 264.50'



‡

Summary for Reach Post: Post

Inflow Area = 44.524 ac, 13.95% Impervious, Inflow Depth > 1.42" for 25-YR event
Inflow = 31.70 cfs @ 12.31 hrs, Volume= 5.257 af
Outflow = 31.70 cfs @ 12.31 hrs, Volume= 5.257 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Reach Post East: Post East

Inflow Area = 22.854 ac, 13.09% Impervious, Inflow Depth > 1.38" for 25-YR event
Inflow = 16.97 cfs @ 12.11 hrs, Volume= 2.625 af
Outflow = 16.97 cfs @ 12.11 hrs, Volume= 2.625 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Reach Post West: Post West Pond

Inflow Area = 21.670 ac, 14.86% Impervious, Inflow Depth > 1.46" for 25-YR event
Inflow = 23.99 cfs @ 12.36 hrs, Volume= 2.632 af
Outflow = 23.99 cfs @ 12.36 hrs, Volume= 2.632 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Pond BASIN 1: BASIN 1

Inflow Area = 1.126 ac, 16.57% Impervious, Inflow Depth > 1.38" for 25-YR event
Inflow = 1.66 cfs @ 12.14 hrs, Volume= 0.130 af
Outflow = 0.75 cfs @ 12.45 hrs, Volume= 0.117 af, Atten= 55%, Lag= 19.2 min
Discarded = 0.08 cfs @ 12.45 hrs, Volume= 0.032 af
Primary = 0.67 cfs @ 12.45 hrs, Volume= 0.085 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 268.09' @ 12.45 hrs Surf.Area= 1,456 sf Storage= 1,595 cf

Plug-Flow detention time= 61.6 min calculated for 0.117 af (90% of inflow)
Center-of-Mass det. time= 31.1 min (858.1 - 827.0)

Volume	Invert	Avail.Storage	Storage Description
#1	266.00'	2,116 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
266.00	358	0	0
267.00	624	491	491
268.00	1,341	983	1,474
268.40	1,873	643	2,116

Device	Routing	Invert	Outlet Devices
#1	Discarded	266.00'	**2.410 in/hr Exfiltration over Surface area**
#2	Primary	268.00'	**12.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Primary	267.00'	**4.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.08 cfs @ 12.45 hrs HW=268.09' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.08 cfs)

Primary OutFlow Max=0.66 cfs @ 12.45 hrs HW=268.09' TW=266.11' (Dynamic Tailwater)
├**2=Orifice/Grate** (Weir Controls 0.26 cfs @ 0.96 fps)
└**3=Orifice/Grate** (Orifice Controls 0.40 cfs @ 4.62 fps)

Summary for Pond BASIN 2: BASIN 2

Inflow Area = 1.071 ac, 17.82% Impervious, Inflow Depth > 1.45" for 25-YR event
Inflow = 1.44 cfs @ 12.21 hrs, Volume= 0.129 af
Outflow = 1.14 cfs @ 12.36 hrs, Volume= 0.110 af, Atten= 21%, Lag= 9.0 min
Discarded = 0.08 cfs @ 12.36 hrs, Volume= 0.047 af
Primary = 1.06 cfs @ 12.36 hrs, Volume= 0.063 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 269.19' @ 12.36 hrs Surf.Area= 1,430 sf Storage= 1,184 cf

Plug-Flow detention time= 73.1 min calculated for 0.110 af (85% of inflow)
Center-of-Mass det. time= 30.4 min (859.4 - 829.0)

Volume	Invert	Avail.Storage	Storage Description
#1	268.00'	2,728 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
268.00	660	0	0
269.00	1,207	934	934
270.00	2,382	1,795	2,728

Device	Routing	Invert	Outlet Devices
#1	Discarded	268.00'	**2.410 in/hr Exfiltration over Surface area**
#2	Primary	269.00'	**15.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.08 cfs @ 12.36 hrs HW=269.19' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.08 cfs)

Primary OutFlow Max=1.05 cfs @ 12.36 hrs HW=269.19' TW=267.23' (Dynamic Tailwater)
↑—**2=Orifice/Grate** (Weir Controls 1.05 cfs @ 1.42 fps)

Summary for Pond BASIN 3: BASIN 3

Inflow Area = 1.288 ac, 22.05% Impervious, Inflow Depth > 2.66" for 25-YR event
Inflow = 3.63 cfs @ 12.16 hrs, Volume= 0.285 af
Outflow = 3.47 cfs @ 12.18 hrs, Volume= 0.284 af, Atten= 4%, Lag= 1.6 min
Discarded = 0.02 cfs @ 12.19 hrs, Volume= 0.009 af
Primary = 3.45 cfs @ 12.18 hrs, Volume= 0.275 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 269.34' @ 12.19 hrs Surf.Area= 1,021 sf Storage= 748 cf

Plug-Flow detention time= 6.7 min calculated for 0.284 af (100% of inflow)
Center-of-Mass det. time= 5.1 min (803.0 - 797.9)

Volume	Invert	Avail.Storage	Storage Description
#1	268.00'	921 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
268.00	309	0	0
269.00	621	465	465
269.50	1,202	456	921

Device	Routing	Invert	Outlet Devices
#1	Discarded	268.00'	**1.000 in/hr Exfiltration over Surface area**
#2	Primary	269.00'	**15.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Primary	268.00'	**6.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.02 cfs @ 12.19 hrs HW=269.34' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=3.41 cfs @ 12.18 hrs HW=269.34' TW=268.49' (Dynamic Tailwater)
├**2=Orifice/Grate** (Weir Controls 2.54 cfs @ 1.90 fps)
└**3=Orifice/Grate** (Orifice Controls 0.87 cfs @ 4.43 fps)

Summary for Pond BASIN 4: BASIN 4

Inflow Area = 2.610 ac, 26.31% Impervious, Inflow Depth > 2.77" for 25-YR event
Inflow = 8.03 cfs @ 12.13 hrs, Volume= 0.602 af
Outflow = 5.52 cfs @ 12.24 hrs, Volume= 0.586 af, Atten= 31%, Lag= 6.6 min
Discarded = 0.24 cfs @ 12.25 hrs, Volume= 0.105 af
Primary = 0.58 cfs @ 12.14 hrs, Volume= 0.262 af
Secondary = 4.77 cfs @ 12.25 hrs, Volume= 0.220 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 270.65' @ 12.25 hrs Surf.Area= 4,366 sf Storage= 5,633 cf

Plug-Flow detention time= 44.6 min calculated for 0.586 af (97% of inflow)
Center-of-Mass det. time= 34.6 min (826.8 - 792.1)

Volume	Invert	Avail.Storage	Storage Description
#1	268.00'	7,263 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
268.00	746	0	0
269.00	1,234	990	990
270.00	3,149	2,192	3,182
271.00	5,014	4,082	7,263

Device	Routing	Invert	Outlet Devices
#1	Discarded	268.00'	**2.410 in/hr Exfiltration over Surface area**
#2	Secondary	270.00'	**15.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

#3 Primary 268.50' **4.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.24 cfs @ 12.25 hrs HW=270.65' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.24 cfs)

Primary OutFlow Max=0.54 cfs @ 12.14 hrs HW=270.54' TW=268.89' (Dynamic Tailwater)
3=Orifice/Grate (Orifice Controls 0.54 cfs @ 6.18 fps)

Secondary OutFlow Max=4.77 cfs @ 12.25 hrs HW=270.65' TW=269.33' (Dynamic Tailwater)
2=Orifice/Grate (Orifice Controls 4.77 cfs @ 3.89 fps)

Summary for Pond CB P1: CB P1

Inflow Area = 3.637 ac, 19.37% Impervious, Inflow Depth > 1.75" for 25-YR event
Inflow = 6.30 cfs @ 12.18 hrs, Volume= 0.529 af
Outflow = 6.30 cfs @ 12.18 hrs, Volume= 0.529 af, Atten= 0%, Lag= 0.0 min
Primary = 6.30 cfs @ 12.18 hrs, Volume= 0.529 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 281.03' @ 12.20 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	276.60'	**12.0" Round 12" Culvert** L= 10.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 276.60' / 276.50' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=6.06 cfs @ 12.18 hrs HW=280.86' TW=278.29' (Dynamic Tailwater)
1=12" Culvert (Inlet Controls 6.06 cfs @ 7.72 fps)

Summary for Pond CB P2: CB P2

Inflow Area = 0.119 ac,100.00% Impervious, Inflow Depth > 4.87" for 25-YR event
Inflow = 0.61 cfs @ 12.10 hrs, Volume= 0.048 af
Outflow = 0.61 cfs @ 12.10 hrs, Volume= 0.048 af, Atten= 0%, Lag= 0.0 min
Primary = 0.61 cfs @ 12.10 hrs, Volume= 0.048 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 278.35' @ 12.22 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	276.60'	**12.0" Round 12" Culvert** L= 10.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 276.60' / 276.50' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 12.10 hrs HW=277.51' TW=277.92' (Dynamic Tailwater)
1=12" Culvert (Controls 0.00 cfs)

Summary for Pond CB P3: CB P3

Inflow Area = 0.336 ac, 20.02% Impervious, Inflow Depth > 1.83" for 25-YR event
Inflow = 0.75 cfs @ 12.10 hrs, Volume= 0.051 af
Outflow = 0.75 cfs @ 12.10 hrs, Volume= 0.051 af, Atten= 0%, Lag= 0.0 min
Primary = 0.75 cfs @ 12.10 hrs, Volume= 0.051 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 274.02' @ 12.22 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	272.75'	**12.0" Round 12" Culvert** L= 27.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 272.75' / 272.60' S= 0.0056 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 12.10 hrs HW=273.68' TW=273.84' (Dynamic Tailwater)
1=12" Culvert (Controls 0.00 cfs)

Summary for Pond CB P4: CB P4

Inflow Area = 0.725 ac, 27.39% Impervious, Inflow Depth > 1.90" for 25-YR event
Inflow = 1.31 cfs @ 12.21 hrs, Volume= 0.115 af
Outflow = 1.31 cfs @ 12.21 hrs, Volume= 0.115 af, Atten= 0%, Lag= 0.0 min
Primary = 1.31 cfs @ 12.21 hrs, Volume= 0.115 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 266.35' @ 12.25 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	265.55'	**12.0" Round Culvert** L= 10.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 265.55' / 265.45' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=1.15 cfs @ 12.21 hrs HW=266.32' TW=266.16' (Dynamic Tailwater)
1=Culvert (Outlet Controls 1.15 cfs @ 2.43 fps)

Summary for Pond CB P5: CB P5

Inflow Area = 0.197 ac, 84.33% Impervious, Inflow Depth > 4.12" for 25-YR event
Inflow = 0.88 cfs @ 12.11 hrs, Volume= 0.067 af
Outflow = 0.88 cfs @ 12.11 hrs, Volume= 0.067 af, Atten= 0%, Lag= 0.0 min
Primary = 0.88 cfs @ 12.11 hrs, Volume= 0.067 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 267.35' @ 12.11 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	266.80'	**12.0" Round 12" Culvert** L= 10.0' CPP, square edge headwall, Ke= 0.500

Inlet / Outlet Invert= 266.80' / 266.70' S= 0.0100 '/' Cc= 0.900
n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.86 cfs @ 12.11 hrs HW=267.34' TW=267.07' (Dynamic Tailwater)
1=12" Culvert (Barrel Controls 0.86 cfs @ 2.88 fps)

Summary for Pond CB P7: CB P7

Inflow Area = 0.802 ac, 47.85% Impervious, Inflow Depth > 3.41" for 25-YR event
Inflow = 3.08 cfs @ 12.12 hrs, Volume= 0.228 af
Outflow = 3.08 cfs @ 12.12 hrs, Volume= 0.228 af, Atten= 0%, Lag= 0.0 min
Primary = 3.08 cfs @ 12.12 hrs, Volume= 0.228 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 271.02' @ 12.16 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	267.80'	**12.0" Round 12" Culvert**
			L= 30.0' CPP, square edge headwall, Ke= 0.500
			Inlet / Outlet Invert= 267.80' / 267.65' S= 0.0050 '/' Cc= 0.900
			n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=2.57 cfs @ 12.12 hrs HW=270.92' TW=270.46' (Dynamic Tailwater)
1=12" Culvert (Inlet Controls 2.57 cfs @ 3.27 fps)

Summary for Pond DMH P1: DMH P1

Inflow Area = 3.756 ac, 21.91% Impervious, Inflow Depth > 1.85" for 25-YR event
Inflow = 6.80 cfs @ 12.17 hrs, Volume= 0.577 af
Outflow = 6.80 cfs @ 12.17 hrs, Volume= 0.577 af, Atten= 0%, Lag= 0.0 min
Primary = 6.80 cfs @ 12.17 hrs, Volume= 0.577 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 278.34' @ 12.17 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	276.40'	**15.0" Round 15" Culvert**
			L= 220.0' CPP, square edge headwall, Ke= 0.500
			Inlet / Outlet Invert= 276.40' / 273.00' S= 0.0155 '/' Cc= 0.900
			n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=6.66 cfs @ 12.17 hrs HW=278.30' TW=273.99' (Dynamic Tailwater)
1=15" Culvert (Inlet Controls 6.66 cfs @ 5.43 fps)

Summary for Pond DMH P2: DMH P2

Inflow Area = 4.091 ac, 21.76% Impervious, Inflow Depth > 1.84" for 25-YR event
Inflow = 7.37 cfs @ 12.17 hrs, Volume= 0.629 af
Outflow = 7.37 cfs @ 12.17 hrs, Volume= 0.629 af, Atten= 0%, Lag= 0.0 min
Primary = 4.87 cfs @ 12.18 hrs, Volume= 0.496 af
Secondary = 2.49 cfs @ 12.16 hrs, Volume= 0.133 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 274.00' @ 12.18 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	272.50'	**15.0" Round 15" Culvert** L= 40.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 272.50' / 272.30' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#2	Secondary	273.00'	**15.0" Round 15"Culvert** L= 140.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 273.00' / 272.00' S= 0.0071 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=4.83 cfs @ 12.18 hrs HW=273.99' TW=271.08' (Dynamic Tailwater)
↑**1=15" Culvert** (Barrel Controls 4.83 cfs @ 4.17 fps)

Secondary OutFlow Max=2.31 cfs @ 12.16 hrs HW=273.99' TW=273.43' (Dynamic Tailwater)
↑**2=15"Culvert** (Outlet Controls 2.31 cfs @ 3.03 fps)

Summary for Pond DMH P6: DMH P6

Inflow Area = 4.091 ac, 21.76% Impervious, Inflow Depth = 0.62" for 25-YR event
Inflow = 2.49 cfs @ 12.16 hrs, Volume= 0.213 af
Outflow = 2.49 cfs @ 12.16 hrs, Volume= 0.213 af, Atten= 0%, Lag= 0.0 min
Primary = 2.49 cfs @ 12.16 hrs, Volume= 0.213 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 273.44' @ 12.16 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	272.55'	**15.0" Round Culvert** L= 110.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 272.55' / 272.00' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=2.45 cfs @ 12.16 hrs HW=273.43' TW=262.65' (Dynamic Tailwater)
↑**1=Culvert** (Barrel Controls 2.45 cfs @ 3.72 fps)

Summary for Pond House Infiltration: House Infiltration

Inflow Area = 0.048 ac,100.00% Impervious, Inflow Depth > 4.87" for 25-YR event
Inflow = 0.25 cfs @ 12.09 hrs, Volume= 0.020 af
Outflow = 0.01 cfs @ 9.40 hrs, Volume= 0.009 af, Atten= 97%, Lag= 0.0 min
Discarded = 0.01 cfs @ 9.40 hrs, Volume= 0.009 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 271.62' @ 15.92 hrs Surf.Area= 323 sf Storage= 521 cf

Plug-Flow detention time= 159.1 min calculated for 0.009 af (43% of inflow)
Center-of-Mass det. time= 49.9 min (784.5 - 734.6)

Volume	Invert	Avail.Storage	Storage Description
#1	270.00'	373 cf	**ADS_StormTech SC-740** x 8 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 2 rows
#2	269.00'	368 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 1,292 cf Overall - 373 cf Embedded = 919 cf x 40.0% Voids
		741 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
269.00	323	0	0
273.00	323	1,292	1,292

Device	Routing	Invert	Outlet Devices
#1	Discarded	269.00'	**1.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.01 cfs @ 9.40 hrs HW=269.04' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Summary for Pond Pipe Infil: Pipe Infiltration

Inflow Area = 4.091 ac, 21.76% Impervious, Inflow Depth > 1.45" for 25-YR event
Inflow = 4.87 cfs @ 12.18 hrs, Volume= 0.496 af
Outflow = 0.72 cfs @ 13.08 hrs, Volume= 0.281 af, Atten= 85%, Lag= 54.5 min
Discarded = 0.26 cfs @ 11.65 hrs, Volume= 0.201 af
Secondary = 0.47 cfs @ 13.08 hrs, Volume= 0.080 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 273.33' @ 13.10 hrs Surf.Area= 4,588 sf Storage= 10,133 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 79.2 min (897.4 - 818.2)

Volume	Invert	Avail.Storage	Storage Description
#1	270.00'	5,089 cf	**36.0" Round Pipe Storage** x 6 Inside #2 L= 120.0'
#2	269.50'	5,305 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 18,352 cf Overall - 5,089 cf Embedded = 13,263 cf x 40.0% Voids
#3	270.00'	88 cf	**4.00'D x 7.00'H Vertical Cone/Cylinder** Impervious
		10,482 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
269.50	4,588	0	0
273.50	4,588	18,352	18,352

Device	Routing	Invert	Outlet Devices
#1	Discarded	269.50'	**2.410 in/hr Exfiltration over Surface area**
#2	Secondary	273.00'	**15.0" Round 15" Culvert**

L= 26.0' CPP, square edge headwall, Ke= 0.500
Inlet / Outlet Invert= 273.00' / 272.65' S= 0.0135 '/' Cc= 0.900
n= 0.012, Flow Area= 1.23 sf

Discarded OutFlow Max=0.26 cfs @ 11.65 hrs HW=269.58' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.26 cfs)

Secondary OutFlow Max=0.46 cfs @ 13.08 hrs HW=273.33' TW=273.02' (Dynamic Tailwater)
2=15" Culvert (Outlet Controls 0.46 cfs @ 2.64 fps)

Summary for Pond Post Existing Pond: Existing Pond

Inflow Area = 17.528 ac, 16.72% Impervious, Inflow Depth > 1.86" for 25-YR event
Inflow = 30.19 cfs @ 12.21 hrs, Volume= 2.710 af
Outflow = 6.71 cfs @ 12.82 hrs, Volume= 1.444 af, Atten= 78%, Lag= 36.7 min
Primary = 6.71 cfs @ 12.82 hrs, Volume= 1.444 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 263.42' @ 12.82 hrs Surf.Area= 52,989 sf Storage= 59,871 cf

Plug-Flow detention time= 168.0 min calculated for 1.444 af (53% of inflow)
Center-of-Mass det. time= 85.8 min (896.1 - 810.2)

Volume	Invert	Avail.Storage	Storage Description
#1	262.00'	64,223 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
262.00	31,406	0	0
263.50	54,224	64,223	64,223

Device	Routing	Invert	Outlet Devices
#1	Primary	263.30'	**70.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=6.69 cfs @ 12.82 hrs HW=263.42' TW=0.00' (Dynamic Tailwater)
1=Broad-Crested Rectangular Weir (Weir Controls 6.69 cfs @ 0.81 fps)

Summary for Pond Stormceptor 1: Stormceptor 1

Inflow Area = 1.850 ac, 20.80% Impervious, Inflow Depth > 1.29" for 25-YR event
Inflow = 1.64 cfs @ 12.22 hrs, Volume= 0.199 af
Outflow = 1.64 cfs @ 12.22 hrs, Volume= 0.199 af, Atten= 0%, Lag= 0.0 min
Primary = 1.64 cfs @ 12.22 hrs, Volume= 0.199 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Peak Elev= 266.17' @ 12.22 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	265.35'	**12.0" Round 12" Culvert** L= 70.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 265.35' / 265.00' S= 0.0050 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=1.62 cfs @ 12.22 hrs HW=266.16' TW=265.32' (Dynamic Tailwater)
↑—**1=12" Culvert** (Barrel Controls 1.62 cfs @ 3.24 fps)

Summary for Pond Stormceptor 2: Stormceptor 2

Inflow Area = 1.268 ac, 28.14% Impervious, Inflow Depth > 1.23" for 25-YR event
Inflow = 1.44 cfs @ 12.34 hrs, Volume= 0.130 af
Outflow = 1.44 cfs @ 12.34 hrs, Volume= 0.130 af, Atten= 0%, Lag= 0.0 min
Primary = 1.44 cfs @ 12.34 hrs, Volume= 0.130 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 267.24' @ 12.34 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	266.60'	**12.0" Round 12" Culvert** L= 40.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 266.60' / 266.00' S= 0.0150 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.43 cfs @ 12.34 hrs HW=267.24' TW=266.19' (Dynamic Tailwater)
↑—**1=12" Culvert** (Inlet Controls 1.43 cfs @ 2.71 fps)

Summary for Pond Stormceptor 3: Stormceptor 3

Inflow Area = 1.552 ac, 34.07% Impervious, Inflow Depth > 2.94" for 25-YR event
Inflow = 4.56 cfs @ 12.16 hrs, Volume= 0.380 af
Outflow = 4.56 cfs @ 12.16 hrs, Volume= 0.380 af, Atten= 0%, Lag= 0.0 min
Primary = 4.56 cfs @ 12.16 hrs, Volume= 0.380 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 268.56' @ 12.16 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	266.60'	**12.0" Round 12" Culvert** L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 266.60' / 266.50' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=4.50 cfs @ 12.16 hrs HW=268.54' TW=266.45' (Dynamic Tailwater)
↑—**1=12" Culvert** (Barrel Controls 4.50 cfs @ 5.73 fps)

Summary for Pond Stormceptor 4: Stormceptor 4

Inflow Area = 2.610 ac, 26.31% Impervious, Inflow Depth > 2.21" for 25-YR event
Inflow = 5.28 cfs @ 12.24 hrs, Volume= 0.482 af
Outflow = 5.28 cfs @ 12.24 hrs, Volume= 0.482 af, Atten= 0%, Lag= 0.0 min
Primary = 5.28 cfs @ 12.24 hrs, Volume= 0.482 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 269.33' @ 12.26 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	266.60'	**12.0" Round 12" Culvert** L= 40.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 266.60' / 266.00' S= 0.0150 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=5.21 cfs @ 12.24 hrs HW=269.31' TW=267.41' (Dynamic Tailwater)
↑—**1=12" Culvert** (Inlet Controls 5.21 cfs @ 6.63 fps)

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentHouse: House Runoff Area=2,100 sf 100.00% Impervious Runoff Depth>5.97"
Flow Length=30' Slope=0.3000 '/' Tc=6.0 min CN=98 Runoff=0.31 cfs 0.024 af

SubcatchmentPost 1a: Post 1a Runoff Area=683,115 sf 11.14% Impervious Runoff Depth>2.09"
Flow Length=936' Slope=0.0530 '/' Tc=22.1 min UI Adjusted CN=59 Runoff=25.95 cfs 2.729 af

SubcatchmentPost 1b: Post 1b Runoff Area=14,627 sf 20.02% Impervious Runoff Depth>2.65"
Flow Length=269' Slope=0.0790 '/' Tc=6.0 min UI Adjusted CN=65 Runoff=1.10 cfs 0.074 af

SubcatchmentPost 1c: Post 1c Runoff Area=31,561 sf 27.39% Impervious Runoff Depth>2.74"
Flow Length=497' Slope=0.0270 '/' Tc=14.4 min UI Adjusted CN=66 Runoff=1.91 cfs 0.165 af

SubcatchmentPost 1d: Post 1d Runoff Area=49,031 sf 16.57% Impervious Runoff Depth>2.10"
Flow Length=285' Slope=0.0530 '/' Tc=8.3 min UI Adjusted CN=59 Runoff=2.62 cfs 0.197 af

SubcatchmentPost 1e: Post 1e Runoff Area=8,566 sf 84.33% Impervious Runoff Depth>5.22"
Flow Length=335' Slope=0.0130 '/' Tc=8.2 min CN=90 Runoff=1.11 cfs 0.086 af

SubcatchmentPost 1f: Post 1f Runoff Area=46,660 sf 17.82% Impervious Runoff Depth>2.18"
Flow Length=456' Slope=0.0370 '/' Tc=13.8 min UI Adjusted CN=60 Runoff=2.24 cfs 0.195 af

SubcatchmentPost 1g: Post 1g Runoff Area=34,936 sf 47.85% Impervious Runoff Depth>4.47"
Flow Length=298' Slope=0.0170 '/' Tc=8.4 min CN=83 Runoff=3.99 cfs 0.299 af

SubcatchmentPost 1h: Post 1h Runoff Area=78,757 sf 16.75% Impervious Runoff Depth>3.42"
Flow Length=454' Slope=0.0480 '/' Tc=9.0 min UI Adjusted CN=73 Runoff=6.90 cfs 0.516 af

SubcatchmentPost 2a: Post 2a Runoff Area=517,689 sf 12.72% Impervious Runoff Depth>3.02"
Flow Length=863' Slope=0.0640 '/' Tc=14.5 min UI Adjusted CN=69 Runoff=34.59 cfs 2.995 af

SubcatchmentPost 2b: Post 2b Runoff Area=158,426 sf 19.37% Impervious Runoff Depth>2.55"
Flow Length=634' Slope=0.0660 '/' Tc=12.1 min UI Adjusted CN=64 Runoff=9.37 cfs 0.773 af

SubcatchmentPost 2c: Post 2c Runoff Area=5,166 sf 100.00% Impervious Runoff Depth>5.97"
Flow Length=431' Slope=0.0120 '/' Tc=7.0 min CN=98 Runoff=0.74 cfs 0.059 af

SubcatchmentPost 2d: Post 2d Runoff Area=11,483 sf 92.82% Impervious Runoff Depth>5.90"
Flow Length=636' Slope=0.0220 '/' Tc=7.5 min CN=97 Runoff=1.62 cfs 0.130 af

SubcatchmentPost 2e: Post 2e Runoff Area=56,126 sf 22.05% Impervious Runoff Depth>3.62"
Flow Length=487' Slope=0.0300 '/' Tc=11.0 min UI Adjusted CN=75 Runoff=4.93 cfs 0.389 af

SubcatchmentPost 3: Post 3 Runoff Area=232,010 sf 1.15% Impervious Runoff Depth>3.63"
Flow Length=457' Slope=0.0780 '/' Tc=7.1 min CN=75 Runoff=23.06 cfs 1.611 af

SubcatchmentPost 4: Post 4 Runoff Area=11,316 sf 17.43% Impervious Runoff Depth>2.28"
Flow Length=103' Slope=0.0530 '/' Tc=6.0 min UI Adjusted CN=61 Runoff=0.72 cfs 0.049 af

Reach FILTER STRIP 1A-1: FILTER Avg. Flow Depth=0.52' Max Vel=0.44 fps Inflow=3.63 cfs 0.312 af
n=0.400 L=194.0' S=0.0567 '/' Capacity=2.83 cfs Outflow=3.07 cfs 0.310 af

Reach FILTER STRIP 1A-2: FILTER Avg. Flow Depth=0.28' Max Vel=0.33 fps Inflow=2.65 cfs 0.208 af
n=0.400 L=202.0' S=0.0743 '/' Capacity=7.62 cfs Outflow=2.12 cfs 0.207 af

Reach FILTER STRIP 1A-3: FILTER Avg. Flow Depth=0.48' Max Vel=0.49 fps Inflow=7.08 cfs 0.674 af
n=0.400 L=177.0' S=0.0791 '/' Capacity=6.70 cfs Outflow=6.17 cfs 0.670 af

Reach FILTER STRIP 2A: FILTER STRIP Avg. Flow Depth=0.56' Max Vel=0.23 fps Inflow=6.30 cfs 0.507 af
n=0.400 L=106.0' S=0.0142 '/' Capacity=3.97 cfs Outflow=5.00 cfs 0.503 af

Reach Post: Post Inflow=87.00 cfs 8.272 af
Outflow=87.00 cfs 8.272 af

Reach Post East: Post East Inflow=50.99 cfs 4.307 af
Outflow=50.99 cfs 4.307 af

Reach Post West: Post West Pond Inflow=37.52 cfs 3.965 af
Outflow=37.52 cfs 3.965 af

Pond BASIN 1: BASIN 1 Peak Elev=268.26' Storage=1,865 cf Inflow=2.62 cfs 0.197 af
Discarded=0.09 cfs 0.037 af Primary=1.79 cfs 0.147 af Outflow=1.88 cfs 0.184 af

Pond BASIN 2: BASIN 2 Peak Elev=269.29' Storage=1,335 cf Inflow=2.24 cfs 0.195 af
Discarded=0.09 cfs 0.051 af Primary=2.02 cfs 0.123 af Outflow=2.11 cfs 0.174 af

Pond BASIN 3: BASIN 3 Peak Elev=270.05' Storage=921 cf Inflow=4.93 cfs 0.389 af
Discarded=0.03 cfs 0.010 af Primary=5.14 cfs 0.378 af Outflow=5.17 cfs 0.388 af

Pond BASIN 4: BASIN 4 Peak Elev=271.72' Storage=7,263 cf Inflow=10.90 cfs 0.815 af
Discarded=0.28 cfs 0.123 af Primary=0.58 cfs 0.308 af Secondary=6.61 cfs 0.366 af Outflow=7.36 cfs 0.797 af

Pond CB P1: CB P1 Peak Elev=286.17' Inflow=9.37 cfs 0.773 af
12.0" Round Culvert n=0.012 L=10.0' S=0.0100 '/' Outflow=9.37 cfs 0.773 af

Pond CB P2: CB P2 Peak Elev=280.39' Inflow=0.74 cfs 0.059 af
12.0" Round Culvert n=0.012 L=10.0' S=0.0100 '/' Outflow=0.74 cfs 0.059 af

Pond CB P3: CB P3 Peak Elev=275.28' Inflow=1.10 cfs 0.074 af
12.0" Round Culvert n=0.012 L=27.0' S=0.0056 '/' Outflow=1.10 cfs 0.074 af

Pond CB P4: CB P4 Peak Elev=267.48' Inflow=1.91 cfs 0.165 af
12.0" Round Culvert n=0.013 L=10.0' S=0.0100 '/' Outflow=1.91 cfs 0.165 af

Pond CB P5: CB P5 Peak Elev=267.62' Inflow=1.11 cfs 0.086 af
12.0" Round Culvert n=0.012 L=10.0' S=0.0100 '/' Outflow=1.11 cfs 0.086 af

Pond CB P7: CB P7 Peak Elev=271.96' Inflow=3.99 cfs 0.299 af
12.0" Round Culvert n=0.012 L=30.0' S=0.0050 '/' Outflow=3.99 cfs 0.299 af

Pond DMH P1: DMH P1 Peak Elev=280.37' Inflow=10.01 cfs 0.832 af
15.0" Round Culvert n=0.012 L=220.0' S=0.0155 '/' Outflow=10.01 cfs 0.832 af

Pond DMH P2: DMH P2 Peak Elev=275.27' Inflow=10.85 cfs 0.906 af
Primary=6.55 cfs 0.640 af Secondary=4.33 cfs 0.267 af Outflow=10.85 cfs 0.906 af

Pond DMH P6: DMH P6 Peak Elev=275.46' Inflow=7.63 cfs 0.471 af
15.0" Round Culvert n=0.012 L=110.0' S=0.0050 '/' Outflow=7.63 cfs 0.471 af

Pond House Infiltration: House Infiltration Peak Elev=272.57' Storage=685 cf Inflow=0.31 cfs 0.024 af
Outflow=0.01 cfs 0.009 af

Pond Pipe Infil: Pipe Infiltration Peak Elev=275.59' Storage=10,465 cf Inflow=6.55 cfs 0.640 af
Discarded=0.26 cfs 0.214 af Secondary=5.96 cfs 0.205 af Outflow=6.21 cfs 0.419 af

Pond Post Existing Pond: Existing Pond Peak Elev=263.69' Storage=64,223 cf Inflow=43.45 cfs 3.969 af
Outflow=42.52 cfs 2.696 af

Pond Stormceptor 1: Stormceptor 1 Peak Elev=267.23' Inflow=3.63 cfs 0.312 af
12.0" Round Culvert n=0.013 L=70.0' S=0.0050 '/' Outflow=3.63 cfs 0.312 af

Pond Stormceptor 2: Stormceptor 2 Peak Elev=267.59' Inflow=2.65 cfs 0.208 af
12.0" Round Culvert n=0.012 L=40.0' S=0.0150 '/' Outflow=2.65 cfs 0.208 af

Pond Stormceptor 3: Stormceptor 3 Peak Elev=269.85' Inflow=6.30 cfs 0.507 af
12.0" Round Culvert n=0.012 L=20.0' S=0.0050 '/' Outflow=6.30 cfs 0.507 af

Pond Stormceptor 4: Stormceptor 4 Peak Elev=270.94' Inflow=7.08 cfs 0.674 af
12.0" Round Culvert n=0.012 L=40.0' S=0.0150 '/' Outflow=7.08 cfs 0.674 af

Total Runoff Area = 44.572 ac Runoff Volume = 10.290 af Average Runoff Depth = 2.77"
85.95% Pervious = 38.311 ac 14.05% Impervious = 6.261 ac

Summary for Subcatchment House: House

Runoff = 0.31 cfs @ 12.09 hrs, Volume= 0.024 af, Depth> 5.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YR Rainfall=6.70"

	Area (sf)	CN	Description
	2,100	98	Unconnected pavement, HSG A
*	0	98	Unconnected pavement, HSG B
	0	98	Unconnected pavement, HSG C
	0	98	Unconnected pavement, HSG D
	0	32	Woods/grass comb., Good, HSG A
	0	39	>75% Grass cover, Good, HSG A
	0	58	Woods/grass comb., Good, HSG B
	0	61	>75% Grass cover, Good, HSG B
	0	72	Woods/grass comb., Good, HSG C
	0	74	>75% Grass cover, Good, HSG C
	0	79	Woods/grass comb., Good, HSG D
	0	80	>75% Grass cover, Good, HSG D
	2,100	98	Weighted Average
	2,100	98	100.00% Impervious Area
	2,100		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	30	0.3000	3.01		**Lag/CN Method, Houses**
0.2	30	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment Post 1a: Post 1a

Runoff = 25.95 cfs @ 12.33 hrs, Volume= 2.729 af, Depth> 2.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YR Rainfall=6.70"

Area (sf)	CN	Adj	Description
3,833	98		Unconnected pavement, HSG A
66,078	98		Unconnected pavement, HSG B
6,212	98		Unconnected pavement, HSG C
0	98		Unconnected pavement, HSG D
46,666	32		Woods/grass comb., Good, HSG A
73,498	39		>75% Grass cover, Good, HSG A
153,778	58		Woods/grass comb., Good, HSG B
255,787	61		>75% Grass cover, Good, HSG B
61,008	72		Woods/grass comb., Good, HSG C
16,255	74		>75% Grass cover, Good, HSG C
0	79		Woods/grass comb., Good, HSG D
0	80		>75% Grass cover, Good, HSG D
683,115	61	59	Weighted Average, UI Adjusted
606,992	57	57	88.86% Pervious Area
76,123	98	98	11.14% Impervious Area
76,123			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.1	936	0.0530	0.71		**Lag/CN Method, Post 1a**

Summary for Subcatchment Post 1b: Post 1b

Runoff = 1.10 cfs @ 12.10 hrs, Volume= 0.074 af, Depth> 2.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YR Rainfall=6.70"

Area (sf)	CN	Adj	Description
0	98		Unconnected pavement, HSG A
2,929	98		Unconnected pavement, HSG B
0	98		Unconnected pavement, HSG C
0	98		Unconnected pavement, HSG D
0	32		Woods/grass comb., Good, HSG A
0	39		>75% Grass cover, Good, HSG A
173	58		Woods/grass comb., Good, HSG B
11,525	61		>75% Grass cover, Good, HSG B
0	72		Woods/grass comb., Good, HSG C
0	74		>75% Grass cover, Good, HSG C
0	79		Woods/grass comb., Good, HSG D
0	80		>75% Grass cover, Good, HSG D
14,627	68	65	Weighted Average, UI Adjusted
11,698	61	61	79.98% Pervious Area
2,929	98	98	20.02% Impervious Area
2,929			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.6	269	0.0790	0.81		**Lag/CN Method, Post 1b**
5.6	269	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment Post 1c: Post 1c

Runoff = 1.91 cfs @ 12.21 hrs, Volume= 0.165 af, Depth> 2.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YR Rainfall=6.70"

Area (sf)	CN	Adj	Description
1,896	98		Unconnected pavement, HSG A
6,747	98		Unconnected pavement, HSG B
0	98		Unconnected pavement, HSG C
0	98		Unconnected pavement, HSG D
0	32		Woods/grass comb., Good, HSG A
22	39		>75% Grass cover, Good, HSG A
106	58		Woods/grass comb., Good, HSG B
22,790	61		>75% Grass cover, Good, HSG B
0	72		Woods/grass comb., Good, HSG C
0	74		>75% Grass cover, Good, HSG C
0	79		Woods/grass comb., Good, HSG D
0	80		>75% Grass cover, Good, HSG D
31,561	71	66	Weighted Average, UI Adjusted
22,918	61	61	72.61% Pervious Area
8,643	98	98	27.39% Impervious Area
8,643			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	497	0.0270	0.58		**Lag/CN Method, Post 1c**

Summary for Subcatchment Post 1d: Post 1d

Runoff = 2.62 cfs @ 12.13 hrs, Volume= 0.197 af, Depth> 2.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YR Rainfall=6.70"

Area (sf)	CN	Adj	Description
3,066	98		Unconnected pavement, HSG A
5,058	98		Unconnected pavement, HSG B
0	98		Unconnected pavement, HSG C
0	98		Unconnected pavement, HSG D
0	32		Woods/grass comb., Good, HSG A
11,103	39		>75% Grass cover, Good, HSG A
0	58		Woods/grass comb., Good, HSG B
29,804	61		>75% Grass cover, Good, HSG B
0	72		Woods/grass comb., Good, HSG C
0	74		>75% Grass cover, Good, HSG C
0	79		Woods/grass comb., Good, HSG D
0	80		>75% Grass cover, Good, HSG D
49,031	62	59	Weighted Average, UI Adjusted
40,907	55	55	83.43% Pervious Area
8,124	98	98	16.57% Impervious Area
8,124			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	285	0.0530	0.57		**Lag/CN Method, Post 1d**

Summary for Subcatchment Post 1e: Post 1e

Runoff = 1.11 cfs @ 12.11 hrs, Volume= 0.086 af, Depth> 5.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YR Rainfall=6.70"

Area (sf)	CN	Description
2,800	98	Unconnected pavement, HSG A
4,424	98	Unconnected pavement, HSG B
0	98	Unconnected pavement, HSG C
0	98	Unconnected pavement, HSG D
0	32	Woods/grass comb., Good, HSG A
809	39	>75% Grass cover, Good, HSG A
0	58	Woods/grass comb., Good, HSG B
533	61	>75% Grass cover, Good, HSG B
0	72	Woods/grass comb., Good, HSG C
0	74	>75% Grass cover, Good, HSG C
0	79	Woods/grass comb., Good, HSG D
0	80	>75% Grass cover, Good, HSG D
8,566	90	Weighted Average
1,342	48	15.67% Pervious Area
7,224	98	84.33% Impervious Area
7,224		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.2	335	0.0130	0.68		**Lag/CN Method, Post 1e**

Summary for Subcatchment Post 1f: Post 1f

Runoff = 2.24 cfs @ 12.21 hrs, Volume= 0.195 af, Depth> 2.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YR Rainfall=6.70"

Area (sf)	CN	Adj	Description
2,113	98		Unconnected pavement, HSG A
6,061	98		Unconnected pavement, HSG B
0	98		Unconnected pavement, HSG C
141	98		Unconnected pavement, HSG D
0	32		Woods/grass comb., Good, HSG A
9,211	39		>75% Grass cover, Good, HSG A
0	58		Woods/grass comb., Good, HSG B
28,313	61		>75% Grass cover, Good, HSG B
0	72		Woods/grass comb., Good, HSG C
0	74		>75% Grass cover, Good, HSG C
0	79		Woods/grass comb., Good, HSG D
821	80		>75% Grass cover, Good, HSG D
46,660	64	60	Weighted Average, UI Adjusted
38,345	56	56	82.18% Pervious Area
8,315	98	98	17.82% Impervious Area
8,315			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.8	456	0.0370	0.55		**Lag/CN Method, Post 1f**

Summary for Subcatchment Post 1g: Post 1g

Runoff = 3.99 cfs @ 12.12 hrs, Volume= 0.299 af, Depth> 4.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YR Rainfall=6.70"

Area (sf)	CN	Description
0	98	Unconnected pavement, HSG A
10,112	98	Unconnected pavement, HSG B
0	98	Unconnected pavement, HSG C
6,606	98	Unconnected pavement, HSG D
0	32	Woods/grass comb., Good, HSG A
0	39	>75% Grass cover, Good, HSG A
0	58	Woods/grass comb., Good, HSG B
10,438	61	>75% Grass cover, Good, HSG B
0	72	Woods/grass comb., Good, HSG C
0	74	>75% Grass cover, Good, HSG C
0	79	Woods/grass comb., Good, HSG D
7,780	80	>75% Grass cover, Good, HSG D
34,936	83	Weighted Average
18,218	69	52.15% Pervious Area
16,718	98	47.85% Impervious Area
16,718		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.4	298	0.0170	0.59		**Lag/CN Method, Post 1g**

Summary for Subcatchment Post 1h: Post 1h

Runoff = 6.90 cfs @ 12.13 hrs, Volume= 0.516 af, Depth> 3.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YR Rainfall=6.70"

Area (sf)	CN	Adj	Description
0	98		Unconnected pavement, HSG A
9,536	98		Unconnected pavement, HSG B
0	98		Unconnected pavement, HSG C
3,653	98		Unconnected pavement, HSG D
0	32		Woods/grass comb., Good, HSG A
0	39		>75% Grass cover, Good, HSG A
2,774	58		Woods/grass comb., Good, HSG B
29,588	61		>75% Grass cover, Good, HSG B
0	72		Woods/grass comb., Good, HSG C
0	74		>75% Grass cover, Good, HSG C
15,915	79		Woods/grass comb., Good, HSG D
17,291	80		>75% Grass cover, Good, HSG D
78,757	75	73	Weighted Average, UI Adjusted
65,568	70	70	83.25% Pervious Area
13,189	98	98	16.75% Impervious Area
13,189			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	454	0.0480	0.85		**Lag/CN Method, Post 1h**

Summary for Subcatchment Post 2a: Post 2a

Runoff = 34.59 cfs @ 12.21 hrs, Volume= 2.995 af, Depth> 3.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YR Rainfall=6.70"

Area (sf)	CN	Adj	Description
0	98		Unconnected pavement, HSG A
29,899	98		Unconnected pavement, HSG B
0	98		Unconnected pavement, HSG C
35,948	98		Unconnected pavement, HSG D
0	32		Woods/grass comb., Good, HSG A
0	39		>75% Grass cover, Good, HSG A
175,494	58		Woods/grass comb., Good, HSG B
95,030	61		>75% Grass cover, Good, HSG B
0	72		Woods/grass comb., Good, HSG C
0	74		>75% Grass cover, Good, HSG C
85,803	79		Woods/grass comb., Good, HSG D
95,515	80		>75% Grass cover, Good, HSG D
517,689	71	69	Weighted Average, UI Adjusted
451,842	67	67	87.28% Pervious Area
65,847	98	98	12.72% Impervious Area
65,847			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.5	863	0.0640	0.99		**Lag/CN Method, Post 2a**

Summary for Subcatchment Post 2b: Post 2b

Runoff = 9.37 cfs @ 12.18 hrs, Volume= 0.773 af, Depth> 2.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YR Rainfall=6.70"

Area (sf)	CN	Adj	Description
0	98		Unconnected pavement, HSG A
30,684	98		Unconnected pavement, HSG B
0	98		Unconnected pavement, HSG C
0	98		Unconnected pavement, HSG D
0	32		Woods/grass comb., Good, HSG A
0	39		>75% Grass cover, Good, HSG A
12,389	58		Woods/grass comb., Good, HSG B
115,353	61		>75% Grass cover, Good, HSG B
0	72		Woods/grass comb., Good, HSG C
0	74		>75% Grass cover, Good, HSG C
0	79		Woods/grass comb., Good, HSG D
0	80		>75% Grass cover, Good, HSG D
158,426	68	64	Weighted Average, UI Adjusted
127,742	61	61	80.63% Pervious Area
30,684	98	98	19.37% Impervious Area
30,684			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.1	634	0.0660	0.87		**Lag/CN Method, Post 2b**

Summary for Subcatchment Post 2c: Post 2c

Runoff = 0.74 cfs @ 12.10 hrs, Volume= 0.059 af, Depth> 5.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YR Rainfall=6.70"

Area (sf)	CN	Description
0	98	Unconnected pavement, HSG A
5,166	98	Unconnected pavement, HSG B
0	98	Unconnected pavement, HSG C
0	98	Unconnected pavement, HSG D
0	32	Woods/grass comb., Good, HSG A
0	39	>75% Grass cover, Good, HSG A
0	58	Woods/grass comb., Good, HSG B
0	61	>75% Grass cover, Good, HSG B
0	72	Woods/grass comb., Good, HSG C
0	74	>75% Grass cover, Good, HSG C
0	79	Woods/grass comb., Good, HSG D
0	80	>75% Grass cover, Good, HSG D
5,166	98	Weighted Average
5,166	98	100.00% Impervious Area
5,166		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	431	0.0120	1.02		**Lag/CN Method, Post 2c**

Summary for Subcatchment Post 2d: Post 2d

Runoff = 1.62 cfs @ 12.10 hrs, Volume= 0.130 af, Depth> 5.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YR Rainfall=6.70"

Area (sf)	CN	Description
0	98	Unconnected pavement, HSG A
3,797	98	Unconnected pavement, HSG B
0	98	Unconnected pavement, HSG C
6,862	98	Unconnected pavement, HSG D
0	32	Woods/grass comb., Good, HSG A
0	39	>75% Grass cover, Good, HSG A
0	58	Woods/grass comb., Good, HSG B
0	61	>75% Grass cover, Good, HSG B
0	72	Woods/grass comb., Good, HSG C
0	74	>75% Grass cover, Good, HSG C
0	79	Woods/grass comb., Good, HSG D
824	80	>75% Grass cover, Good, HSG D
11,483	97	Weighted Average
824	80	7.18% Pervious Area
10,659	98	92.82% Impervious Area
10,659		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	636	0.0220	1.41		**Lag/CN Method, Post 2d**

Summary for Subcatchment Post 2e: Post 2e

Runoff = 4.93 cfs @ 12.16 hrs, Volume= 0.389 af, Depth> 3.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YR Rainfall=6.70"

Area (sf)	CN	Adj	Description
0	98		Unconnected pavement, HSG A
2,740	98		Unconnected pavement, HSG B
0	98		Unconnected pavement, HSG C
9,637	98		Unconnected pavement, HSG D
0	32		Woods/grass comb., Good, HSG A
0	39		>75% Grass cover, Good, HSG A
0	58		Woods/grass comb., Good, HSG B
17,999	61		>75% Grass cover, Good, HSG B
0	72		Woods/grass comb., Good, HSG C
0	74		>75% Grass cover, Good, HSG C
0	79		Woods/grass comb., Good, HSG D
25,750	80		>75% Grass cover, Good, HSG D
56,126	78	75	Weighted Average, UI Adjusted
43,749	72	72	77.95% Pervious Area
12,377	98	98	22.05% Impervious Area
12,377			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.0	487	0.0300	0.74		**Lag/CN Method, Post 2e**

Summary for Subcatchment Post 3: Post 3

Runoff = 23.06 cfs @ 12.10 hrs, Volume= 1.611 af, Depth> 3.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YR Rainfall=6.70"

Area (sf)	CN	Description
0	98	Unconnected pavement, HSG A
2,674	98	Unconnected pavement, HSG B
0	98	Unconnected pavement, HSG C
0	98	Unconnected pavement, HSG D
0	32	Woods/grass comb., Good, HSG A
0	39	>75% Grass cover, Good, HSG A
43,841	58	Woods/grass comb., Good, HSG B
978	61	>75% Grass cover, Good, HSG B
0	72	Woods/grass comb., Good, HSG C
0	74	>75% Grass cover, Good, HSG C
167,870	79	Woods/grass comb., Good, HSG D
16,647	80	>75% Grass cover, Good, HSG D
232,010	75	Weighted Average
229,336	75	98.85% Pervious Area
2,674	98	1.15% Impervious Area
2,674		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.1	457	0.0780	1.08		**Lag/CN Method, Post 3a**

Summary for Subcatchment Post 4: Post 4

Runoff = 0.72 cfs @ 12.10 hrs, Volume= 0.049 af, Depth> 2.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YR Rainfall=6.70"

Area (sf)	CN	Adj	Description
0	98		Unconnected pavement, HSG A
1,972	98		Unconnected pavement, HSG B
0	98		Unconnected pavement, HSG C
0	98		Unconnected pavement, HSG D
0	32		Woods/grass comb., Good, HSG A
0	39		>75% Grass cover, Good, HSG A
9,344	58		Woods/grass comb., Good, HSG B
0	61		>75% Grass cover, Good, HSG B
0	72		Woods/grass comb., Good, HSG C
0	74		>75% Grass cover, Good, HSG C
0	79		Woods/grass comb., Good, HSG D
0	80		>75% Grass cover, Good, HSG D
11,316	65	61	Weighted Average, UI Adjusted
9,344	58	58	82.57% Pervious Area
1,972	98	98	17.43% Impervious Area
1,972			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.4	103	0.0530	0.50		**Lag/CN Method, Post 4**
3.4	103	Total, Increased to minimum Tc = 6.0 min			

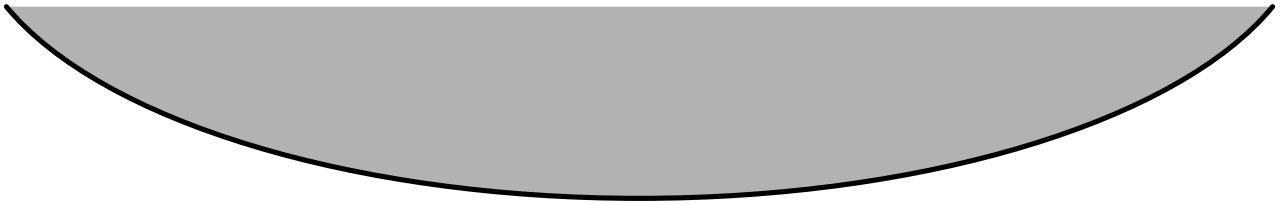
Summary for Reach FILTER STRIP 1A-1: FILTER STRIP 1A-1

Inflow Area = 1.850 ac, 20.80% Impervious, Inflow Depth > 2.03" for 100-YR event
Inflow = 3.63 cfs @ 12.23 hrs, Volume= 0.312 af
Outflow = 3.07 cfs @ 12.34 hrs, Volume= 0.310 af, Atten= 15%, Lag= 6.3 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.44 fps, Min. Travel Time= 7.4 min
Avg. Velocity = 0.19 fps, Avg. Travel Time= 17.4 min

Peak Storage= 1,370 cf @ 12.34 hrs
Average Depth at Peak Storage= 0.52'
Bank-Full Depth= 0.50' Flow Area= 6.7 sf, Capacity= 2.83 cfs

20.00' x 0.50' deep Parabolic Channel, n= 0.400 Sheet flow: Woods+light brush
Length= 194.0' Slope= 0.0567 '/'
Inlet Invert= 265.00', Outlet Invert= 254.00'



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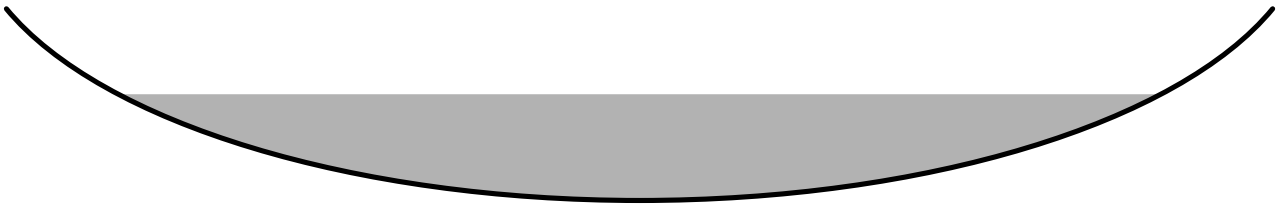
Summary for Reach FILTER STRIP 1A-2: FILTER STRIP 1A-2

Inflow Area = 1.268 ac, 28.14% Impervious, Inflow Depth > 1.97" for 100-YR event
Inflow = 2.65 cfs @ 12.25 hrs, Volume= 0.208 af
Outflow = 2.12 cfs @ 12.38 hrs, Volume= 0.207 af, Atten= 20%, Lag= 8.0 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.33 fps, Min. Travel Time= 10.3 min
Avg. Velocity = 0.12 fps, Avg. Travel Time= 28.9 min

Peak Storage= 1,303 cf @ 12.38 hrs
Average Depth at Peak Storage= 0.28'
Bank-Full Depth= 0.50' Flow Area= 15.7 sf, Capacity= 7.62 cfs

47.00' x 0.50' deep Parabolic Channel, n= 0.400 Sheet flow: Woods+light brush
Length= 202.0' Slope= 0.0743 '/'
Inlet Invert= 266.00', Outlet Invert= 251.00'



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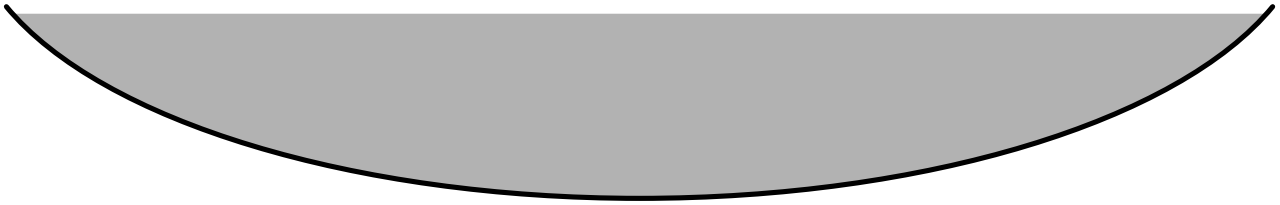
Summary for Reach FILTER STRIP 1A-3: FILTER STRIP 1A-2

Inflow Area = 2.610 ac, 26.31% Impervious, Inflow Depth > 3.10" for 100-YR event
Inflow = 7.08 cfs @ 12.24 hrs, Volume= 0.674 af
Outflow = 6.17 cfs @ 12.30 hrs, Volume= 0.670 af, Atten= 13%, Lag= 3.7 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.49 fps, Min. Travel Time= 6.0 min
Avg. Velocity = 0.22 fps, Avg. Travel Time= 13.1 min

Peak Storage= 2,229 cf @ 12.30 hrs
Average Depth at Peak Storage= 0.48'
Bank-Full Depth= 0.50' Flow Area= 13.3 sf, Capacity= 6.70 cfs

40.00' x 0.50' deep Parabolic Channel, n= 0.400 Sheet flow: Woods+light brush
Length= 177.0' Slope= 0.0791 '/'
Inlet Invert= 267.00', Outlet Invert= 253.00'



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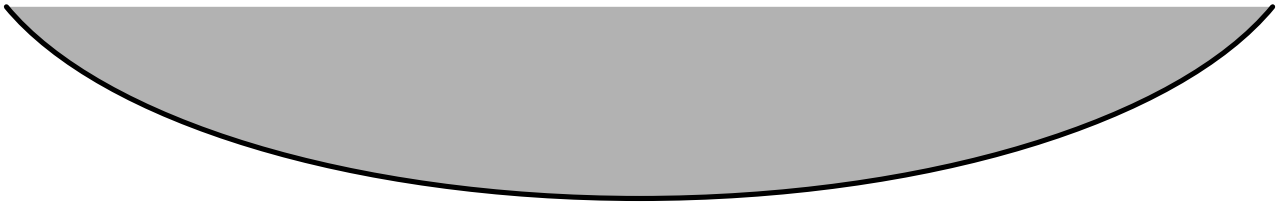
Summary for Reach FILTER STRIP 2A: FILTER STRIP 2A

Inflow Area = 1.552 ac, 34.07% Impervious, Inflow Depth > 3.92" for 100-YR event
Inflow = 6.30 cfs @ 12.19 hrs, Volume= 0.507 af
Outflow = 5.00 cfs @ 12.25 hrs, Volume= 0.503 af, Atten= 21%, Lag= 3.9 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.23 fps, Min. Travel Time= 7.8 min
Avg. Velocity = 0.09 fps, Avg. Travel Time= 20.6 min

Peak Storage= 2,338 cf @ 12.25 hrs
Average Depth at Peak Storage= 0.56'
Bank-Full Depth= 0.50' Flow Area= 18.7 sf, Capacity= 3.97 cfs

56.00' x 0.50' deep Parabolic Channel, n= 0.400 Sheet flow: Woods+light brush
Length= 106.0' Slope= 0.0142 '/'
Inlet Invert= 266.00', Outlet Invert= 264.50'



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Summary for Reach Post: Post

Inflow Area = 44.524 ac, 13.95% Impervious, Inflow Depth > 2.23" for 100-YR event
Inflow = 87.00 cfs @ 12.40 hrs, Volume= 8.272 af
Outflow = 87.00 cfs @ 12.40 hrs, Volume= 8.272 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Reach Post East: Post East

Inflow Area = 22.854 ac, 13.09% Impervious, Inflow Depth > 2.26" for 100-YR event
Inflow = 50.99 cfs @ 12.40 hrs, Volume= 4.307 af
Outflow = 50.99 cfs @ 12.40 hrs, Volume= 4.307 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Reach Post West: Post West Pond

Inflow Area = 21.670 ac, 14.86% Impervious, Inflow Depth > 2.20" for 100-YR event
Inflow = 37.52 cfs @ 12.33 hrs, Volume= 3.965 af
Outflow = 37.52 cfs @ 12.33 hrs, Volume= 3.965 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Pond BASIN 1: BASIN 1

Inflow Area = 1.126 ac, 16.57% Impervious, Inflow Depth > 2.10" for 100-YR event
Inflow = 2.62 cfs @ 12.13 hrs, Volume= 0.197 af
Outflow = 1.88 cfs @ 12.25 hrs, Volume= 0.184 af, Atten= 28%, Lag= 7.4 min
Discarded = 0.09 cfs @ 12.25 hrs, Volume= 0.037 af
Primary = 1.79 cfs @ 12.25 hrs, Volume= 0.147 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 268.26' @ 12.25 hrs Surf.Area= 1,685 sf Storage= 1,865 cf

Plug-Flow detention time= 47.1 min calculated for 0.183 af (93% of inflow)
Center-of-Mass det. time= 24.9 min (842.3 - 817.5)

Volume	Invert	Avail.Storage	Storage Description
#1	266.00'	2,116 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
266.00	358	0	0
267.00	624	491	491
268.00	1,341	983	1,474
268.40	1,873	643	2,116

Device	Routing	Invert	Outlet Devices
#1	Discarded	266.00'	**2.410 in/hr Exfiltration over Surface area**
#2	Primary	268.00'	**12.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Primary	267.00'	**4.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.09 cfs @ 12.25 hrs HW=268.26' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.09 cfs)

Primary OutFlow Max=1.78 cfs @ 12.25 hrs HW=268.26' TW=267.20' (Dynamic Tailwater)
├**2=Orifice/Grate** (Weir Controls 1.35 cfs @ 1.66 fps)
└**3=Orifice/Grate** (Orifice Controls 0.43 cfs @ 4.94 fps)

Summary for Pond BASIN 2: BASIN 2

Inflow Area = 1.071 ac, 17.82% Impervious, Inflow Depth > 2.18" for 100-YR event
Inflow = 2.24 cfs @ 12.21 hrs, Volume= 0.195 af
Outflow = 2.11 cfs @ 12.27 hrs, Volume= 0.174 af, Atten= 6%, Lag= 3.7 min
Discarded = 0.09 cfs @ 12.27 hrs, Volume= 0.051 af
Primary = 2.02 cfs @ 12.27 hrs, Volume= 0.123 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 269.29' @ 12.27 hrs Surf.Area= 1,550 sf Storage= 1,335 cf

Plug-Flow detention time= 50.4 min calculated for 0.173 af (89% of inflow)
Center-of-Mass det. time= 16.6 min (836.4 - 819.8)

Volume	Invert	Avail.Storage	Storage Description
#1	268.00'	2,728 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
268.00	660	0	0
269.00	1,207	934	934
270.00	2,382	1,795	2,728

Device	Routing	Invert	Outlet Devices
#1	Discarded	268.00'	**2.410 in/hr Exfiltration over Surface area**
#2	Primary	269.00'	**15.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.09 cfs @ 12.27 hrs HW=269.29' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.09 cfs)

Primary OutFlow Max=1.98 cfs @ 12.27 hrs HW=269.29' TW=267.57' (Dynamic Tailwater)
↑—**2=Orifice/Grate** (Weir Controls 1.98 cfs @ 1.75 fps)

Summary for Pond BASIN 3: BASIN 3

Inflow Area = 1.288 ac, 22.05% Impervious, Inflow Depth > 3.62" for 100-YR event
Inflow = 4.93 cfs @ 12.16 hrs, Volume= 0.389 af
Outflow = 5.17 cfs @ 12.19 hrs, Volume= 0.388 af, Atten= 0%, Lag= 2.3 min
Discarded = 0.03 cfs @ 12.23 hrs, Volume= 0.010 af
Primary = 5.14 cfs @ 12.19 hrs, Volume= 0.378 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 270.05' @ 12.24 hrs Surf.Area= 1,202 sf Storage= 921 cf

Plug-Flow detention time= 6.2 min calculated for 0.388 af (100% of inflow)
Center-of-Mass det. time= 4.8 min (795.6 - 790.8)

Volume	Invert	Avail.Storage	Storage Description
#1	268.00'	921 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
268.00	309	0	0
269.00	621	465	465
269.50	1,202	456	921

Device	Routing	Invert	Outlet Devices
#1	Discarded	268.00'	**1.000 in/hr Exfiltration over Surface area**
#2	Primary	269.00'	**15.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Primary	268.00'	**6.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.03 cfs @ 12.23 hrs HW=269.90' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=0.68 cfs @ 12.19 hrs HW=269.73' TW=269.72' (Dynamic Tailwater)
├**2=Orifice/Grate** (Orifice Controls 0.59 cfs @ 0.48 fps)
└**3=Orifice/Grate** (Orifice Controls 0.09 cfs @ 0.48 fps)

Summary for Pond BASIN 4: BASIN 4

Inflow Area = 2.610 ac, 26.31% Impervious, Inflow Depth > 3.74" for 100-YR event
Inflow = 10.90 cfs @ 12.12 hrs, Volume= 0.815 af
Outflow = 7.36 cfs @ 12.24 hrs, Volume= 0.797 af, Atten= 33%, Lag= 7.1 min
Discarded = 0.28 cfs @ 12.28 hrs, Volume= 0.123 af
Primary = 0.58 cfs @ 12.09 hrs, Volume= 0.308 af
Secondary = 6.61 cfs @ 12.24 hrs, Volume= 0.366 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 271.72' @ 12.29 hrs Surf.Area= 5,014 sf Storage= 7,263 cf

Plug-Flow detention time= 40.9 min calculated for 0.794 af (97% of inflow)
Center-of-Mass det. time= 32.4 min (817.8 - 785.4)

Volume	Invert	Avail.Storage	Storage Description
#1	268.00'	7,263 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
268.00	746	0	0
269.00	1,234	990	990
270.00	3,149	2,192	3,182
271.00	5,014	4,082	7,263

Device	Routing	Invert	Outlet Devices
#1	Discarded	268.00'	**2.410 in/hr Exfiltration over Surface area**
#2	Secondary	270.00'	**15.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

#3 Primary 268.50' **4.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.28 cfs @ 12.28 hrs HW=271.54' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.28 cfs)

Primary OutFlow Max=0.51 cfs @ 12.09 hrs HW=270.60' TW=269.15' (Dynamic Tailwater)
3=Orifice/Grate (Orifice Controls 0.51 cfs @ 5.81 fps)

Secondary OutFlow Max=4.21 cfs @ 12.24 hrs HW=271.33' TW=270.82' (Dynamic Tailwater)
2=Orifice/Grate (Orifice Controls 4.21 cfs @ 3.43 fps)

Summary for Pond CB P1: CB P1

Inflow Area = 3.637 ac, 19.37% Impervious, Inflow Depth > 2.55" for 100-YR event
Inflow = 9.37 cfs @ 12.18 hrs, Volume= 0.773 af
Outflow = 9.37 cfs @ 12.18 hrs, Volume= 0.773 af, Atten= 0%, Lag= 0.0 min
Primary = 9.37 cfs @ 12.18 hrs, Volume= 0.773 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 286.17' @ 12.20 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	276.60'	**12.0" Round 12" Culvert** L= 10.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 276.60' / 276.50' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=8.76 cfs @ 12.18 hrs HW=285.60' TW=280.22' (Dynamic Tailwater)
1=12" Culvert (Inlet Controls 8.76 cfs @ 11.16 fps)

Summary for Pond CB P2: CB P2

Inflow Area = 0.119 ac,100.00% Impervious, Inflow Depth > 5.97" for 100-YR event
Inflow = 0.74 cfs @ 12.10 hrs, Volume= 0.059 af
Outflow = 0.74 cfs @ 12.10 hrs, Volume= 0.059 af, Atten= 0%, Lag= 0.0 min
Primary = 0.74 cfs @ 12.10 hrs, Volume= 0.059 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 280.39' @ 12.23 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	276.60'	**12.0" Round 12" Culvert** L= 10.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 276.60' / 276.50' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 12.10 hrs HW=278.10' TW=279.01' (Dynamic Tailwater)
1=12" Culvert (Controls 0.00 cfs)

Summary for Pond CB P3: CB P3

Inflow Area = 0.336 ac, 20.02% Impervious, Inflow Depth > 2.65" for 100-YR event
Inflow = 1.10 cfs @ 12.10 hrs, Volume= 0.074 af
Outflow = 1.10 cfs @ 12.10 hrs, Volume= 0.074 af, Atten= 0%, Lag= 0.0 min
Primary = 1.10 cfs @ 12.10 hrs, Volume= 0.074 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 275.28' @ 12.55 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	272.75'	**12.0" Round 12" Culvert** L= 27.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 272.75' / 272.60' S= 0.0056 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 12.10 hrs HW=273.99' TW=274.25' (Dynamic Tailwater)
1=12" Culvert (Controls 0.00 cfs)

Summary for Pond CB P4: CB P4

Inflow Area = 0.725 ac, 27.39% Impervious, Inflow Depth > 2.74" for 100-YR event
Inflow = 1.91 cfs @ 12.21 hrs, Volume= 0.165 af
Outflow = 1.91 cfs @ 12.21 hrs, Volume= 0.165 af, Atten= 0%, Lag= 0.0 min
Primary = 1.91 cfs @ 12.21 hrs, Volume= 0.165 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 267.48' @ 12.27 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	265.55'	**12.0" Round Culvert** L= 10.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 265.55' / 265.45' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 12.21 hrs HW=266.86' TW=267.18' (Dynamic Tailwater)
1=Culvert (Controls 0.00 cfs)

Summary for Pond CB P5: CB P5

Inflow Area = 0.197 ac, 84.33% Impervious, Inflow Depth > 5.22" for 100-YR event
Inflow = 1.11 cfs @ 12.11 hrs, Volume= 0.086 af
Outflow = 1.11 cfs @ 12.11 hrs, Volume= 0.086 af, Atten= 0%, Lag= 0.0 min
Primary = 1.11 cfs @ 12.11 hrs, Volume= 0.086 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 267.62' @ 12.29 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	266.80'	**12.0" Round 12" Culvert** L= 10.0' CPP, square edge headwall, Ke= 0.500

Inlet / Outlet Invert= 266.80' / 266.70' S= 0.0100 '/' Cc= 0.900
n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.00 cfs @ 12.11 hrs HW=267.42' TW=267.20' (Dynamic Tailwater)
1=12" Culvert (Outlet Controls 1.00 cfs @ 2.80 fps)

Summary for Pond CB P7: CB P7

Inflow Area = 0.802 ac, 47.85% Impervious, Inflow Depth > 4.47" for 100-YR event
Inflow = 3.99 cfs @ 12.12 hrs, Volume= 0.299 af
Outflow = 3.99 cfs @ 12.12 hrs, Volume= 0.299 af, Atten= 0%, Lag= 0.0 min
Primary = 3.99 cfs @ 12.12 hrs, Volume= 0.299 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 271.96' @ 12.34 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	267.80'	**12.0" Round 12" Culvert**
			L= 30.0' CPP, square edge headwall, Ke= 0.500
			Inlet / Outlet Invert= 267.80' / 267.65' S= 0.0050 '/' Cc= 0.900
			n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=3.53 cfs @ 12.12 hrs HW=271.59' TW=270.72' (Dynamic Tailwater)
1=12" Culvert (Inlet Controls 3.53 cfs @ 4.50 fps)

Summary for Pond DMH P1: DMH P1

Inflow Area = 3.756 ac, 21.91% Impervious, Inflow Depth > 2.66" for 100-YR event
Inflow = 10.01 cfs @ 12.17 hrs, Volume= 0.832 af
Outflow = 10.01 cfs @ 12.17 hrs, Volume= 0.832 af, Atten= 0%, Lag= 0.0 min
Primary = 10.01 cfs @ 12.17 hrs, Volume= 0.832 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 280.37' @ 12.18 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	276.40'	**15.0" Round 15" Culvert**
			L= 220.0' CPP, square edge headwall, Ke= 0.500
			Inlet / Outlet Invert= 276.40' / 273.00' S= 0.0155 '/' Cc= 0.900
			n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=9.69 cfs @ 12.17 hrs HW=280.22' TW=274.53' (Dynamic Tailwater)
1=15" Culvert (Outlet Controls 9.69 cfs @ 7.90 fps)

Summary for Pond DMH P2: DMH P2

Inflow Area = 4.091 ac, 21.76% Impervious, Inflow Depth > 2.66" for 100-YR event
Inflow = 10.85 cfs @ 12.16 hrs, Volume= 0.906 af
Outflow = 10.85 cfs @ 12.16 hrs, Volume= 0.906 af, Atten= 0%, Lag= 0.0 min
Primary = 6.55 cfs @ 12.17 hrs, Volume= 0.640 af
Secondary = 4.33 cfs @ 12.15 hrs, Volume= 0.267 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 275.27' @ 12.50 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	272.50'	**15.0" Round 15" Culvert** L= 40.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 272.50' / 272.30' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#2	Secondary	273.00'	**15.0" Round 15"Culvert** L= 140.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 273.00' / 272.00' S= 0.0071 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=6.44 cfs @ 12.17 hrs HW=274.53' TW=271.79' (Dynamic Tailwater)
1=15" Culvert (Barrel Controls 6.44 cfs @ 5.25 fps)

Secondary OutFlow Max=4.07 cfs @ 12.15 hrs HW=274.54' TW=273.85' (Dynamic Tailwater)
2=15"Culvert (Outlet Controls 4.07 cfs @ 3.44 fps)

Summary for Pond DMH P6: DMH P6

Inflow Area = 4.091 ac, 21.76% Impervious, Inflow Depth > 1.38" for 100-YR event
Inflow = 7.63 cfs @ 12.45 hrs, Volume= 0.471 af
Outflow = 7.63 cfs @ 12.45 hrs, Volume= 0.471 af, Atten= 0%, Lag= 0.0 min
Primary = 7.63 cfs @ 12.45 hrs, Volume= 0.471 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 275.46' @ 12.45 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	272.55'	**15.0" Round Culvert** L= 110.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 272.55' / 272.00' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=7.58 cfs @ 12.45 hrs HW=275.43' TW=263.53' (Dynamic Tailwater)
1=Culvert (Barrel Controls 7.58 cfs @ 6.17 fps)

Summary for Pond House Infiltration: House Infiltration

Inflow Area = 0.048 ac,100.00% Impervious, Inflow Depth > 5.97" for 100-YR event
Inflow = 0.31 cfs @ 12.09 hrs, Volume= 0.024 af
Outflow = 0.01 cfs @ 8.80 hrs, Volume= 0.009 af, Atten= 98%, Lag= 0.0 min
Discarded = 0.01 cfs @ 8.80 hrs, Volume= 0.009 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 272.57' @ 16.70 hrs Surf.Area= 323 sf Storage= 685 cf

Plug-Flow detention time= 165.0 min calculated for 0.009 af (37% of inflow)
Center-of-Mass det. time= 37.8 min (771.5 - 733.7)

Volume	Invert	Avail.Storage	Storage Description
#1	270.00'	373 cf	**ADS_StormTech SC-740** x 8 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 2 rows
#2	269.00'	368 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 1,292 cf Overall - 373 cf Embedded = 919 cf x 40.0% Voids
		741 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
269.00	323	0	0
273.00	323	1,292	1,292

Device	Routing	Invert	Outlet Devices
#1	Discarded	269.00'	**1.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.01 cfs @ 8.80 hrs HW=269.04' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Summary for Pond Pipe Infil: Pipe Infiltration

Inflow Area = 4.091 ac, 21.76% Impervious, Inflow Depth > 1.88" for 100-YR event
Inflow = 6.55 cfs @ 12.17 hrs, Volume= 0.640 af
Outflow = 6.21 cfs @ 12.45 hrs, Volume= 0.419 af, Atten= 5%, Lag= 16.9 min
Discarded = 0.26 cfs @ 11.25 hrs, Volume= 0.214 af
Secondary = 5.96 cfs @ 12.45 hrs, Volume= 0.205 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 275.59' @ 12.49 hrs Surf.Area= 4,588 sf Storage= 10,465 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 54.5 min (866.0 - 811.4)

Volume	Invert	Avail.Storage	Storage Description
#1	270.00'	5,089 cf	**36.0" Round Pipe Storage** x 6 Inside #2 L= 120.0'
#2	269.50'	5,305 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 18,352 cf Overall - 5,089 cf Embedded = 13,263 cf x 40.0% Voids
#3	270.00'	88 cf	**4.00'D x 7.00'H Vertical Cone/Cylinder** Impervious
		10,482 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
269.50	4,588	0	0
273.50	4,588	18,352	18,352

Device	Routing	Invert	Outlet Devices
#1	Discarded	269.50'	**2.410 in/hr Exfiltration over Surface area**
#2	Secondary	273.00'	**15.0" Round 15" Culvert**

L= 26.0' CPP, square edge headwall, Ke= 0.500
Inlet / Outlet Invert= 273.00' / 272.65' S= 0.0135 '/' Cc= 0.900
n= 0.012, Flow Area= 1.23 sf

Discarded OutFlow Max=0.26 cfs @ 11.25 hrs HW=269.58' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.26 cfs)

Secondary OutFlow Max=0.00 cfs @ 12.45 hrs HW=274.70' TW=275.29' (Dynamic Tailwater)
└**2=15" Culvert** (Controls 0.00 cfs)

Summary for Pond Post Existing Pond: Existing Pond

Inflow Area = 17.528 ac, 16.72% Impervious, Inflow Depth > 2.72" for 100-YR event
Inflow = 43.45 cfs @ 12.20 hrs, Volume= 3.969 af
Outflow = 42.52 cfs @ 12.40 hrs, Volume= 2.696 af, Atten= 2%, Lag= 11.9 min
Primary = 42.52 cfs @ 12.40 hrs, Volume= 2.696 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 263.69' @ 12.40 hrs Surf.Area= 54,224 sf Storage= 64,223 cf

Plug-Flow detention time= 119.9 min calculated for 2.687 af (68% of inflow)
Center-of-Mass det. time= 53.0 min (856.5 - 803.5)

Volume	Invert	Avail.Storage	Storage Description
#1	262.00'	64,223 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
262.00	31,406	0	0
263.50	54,224	64,223	64,223

Device	Routing	Invert	Outlet Devices
#1	Primary	263.30'	**70.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=41.21 cfs @ 12.40 hrs HW=263.68' TW=0.00' (Dynamic Tailwater)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 41.21 cfs @ 1.54 fps)

Summary for Pond Stormceptor 1: Stormceptor 1

Inflow Area = 1.850 ac, 20.80% Impervious, Inflow Depth > 2.03" for 100-YR event
Inflow = 3.63 cfs @ 12.23 hrs, Volume= 0.312 af
Outflow = 3.63 cfs @ 12.23 hrs, Volume= 0.312 af, Atten= 0%, Lag= 0.0 min
Primary = 3.63 cfs @ 12.23 hrs, Volume= 0.312 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Peak Elev= 267.23' @ 12.23 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	265.35'	**12.0" Round 12" Culvert** L= 70.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 265.35' / 265.00' S= 0.0050 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=3.59 cfs @ 12.23 hrs HW=267.20' TW=265.47' (Dynamic Tailwater)
↑—**1=12" Culvert** (Barrel Controls 3.59 cfs @ 4.57 fps)

Summary for Pond Stormceptor 2: Stormceptor 2

Inflow Area = 1.268 ac, 28.14% Impervious, Inflow Depth > 1.97" for 100-YR event
Inflow = 2.65 cfs @ 12.25 hrs, Volume= 0.208 af
Outflow = 2.65 cfs @ 12.25 hrs, Volume= 0.208 af, Atten= 0%, Lag= 0.0 min
Primary = 2.65 cfs @ 12.25 hrs, Volume= 0.208 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 267.59' @ 12.25 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	266.60'	**12.0" Round 12" Culvert** L= 40.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 266.60' / 266.00' S= 0.0150 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=2.64 cfs @ 12.25 hrs HW=267.58' TW=266.24' (Dynamic Tailwater)
↑—**1=12" Culvert** (Inlet Controls 2.64 cfs @ 3.38 fps)

Summary for Pond Stormceptor 3: Stormceptor 3

Inflow Area = 1.552 ac, 34.07% Impervious, Inflow Depth > 3.92" for 100-YR event
Inflow = 6.30 cfs @ 12.19 hrs, Volume= 0.507 af
Outflow = 6.30 cfs @ 12.19 hrs, Volume= 0.507 af, Atten= 0%, Lag= 0.0 min
Primary = 6.30 cfs @ 12.19 hrs, Volume= 0.507 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 269.85' @ 12.19 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	266.60'	**12.0" Round 12" Culvert** L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 266.60' / 266.50' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=6.05 cfs @ 12.19 hrs HW=269.66' TW=266.54' (Dynamic Tailwater)
↑—**1=12" Culvert** (Inlet Controls 6.05 cfs @ 7.70 fps)

Summary for Pond Stormceptor 4: Stormceptor 4

Inflow Area = 2.610 ac, 26.31% Impervious, Inflow Depth > 3.10" for 100-YR event
Inflow = 7.08 cfs @ 12.24 hrs, Volume= 0.674 af
Outflow = 7.08 cfs @ 12.24 hrs, Volume= 0.674 af, Atten= 0%, Lag= 0.0 min
Primary = 7.08 cfs @ 12.24 hrs, Volume= 0.674 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 270.94' @ 12.24 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	266.60'	**12.0" Round 12" Culvert** L= 40.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 266.60' / 266.00' S= 0.0150 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=6.91 cfs @ 12.24 hrs HW=270.81' TW=267.47' (Dynamic Tailwater)
↑—**1=12" Culvert** (Inlet Controls 6.91 cfs @ 8.80 fps)

APPENDIX C

Stormwater Checklist and Sizing Calculations

Paradise Valley Club
Grove Street
Framingham, Massachusetts

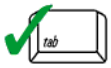
Oak Consulting Group
Project 13005

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands Program

Checklist for Stormwater Report

A. Introduction

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



A Stormwater Report must be submitted with the Notice of Intent permit application to document compliance with the Stormwater Management Standards. The following checklist is NOT a substitute for the Stormwater Report (which should provide more substantive and detailed information) but is offered here as a tool to help the applicant organize their Stormwater Management documentation for their Report and for the reviewer to assess this information in a consistent format. As noted in the Checklist, the Stormwater Report must contain the engineering computations and supporting information set forth in Volume 3 of the Massachusetts Stormwater Handbook. The Stormwater Report must be prepared and certified by a Registered Professional Engineer (RPE) licensed in the Commonwealth.

The Stormwater Report must include:

- The Stormwater Checklist completed and stamped by a Registered Professional Engineer (see page 2) that certifies that the Stormwater Report contains all required submittals.[1] This Checklist is to be used as the cover for the completed Stormwater Report.
- Applicant/Project Name
- Project Address
- Name of Firm and Registered Professional Engineer that prepared the Report
- Long-Term Pollution Prevention Plan required by Standards 4-6
- Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan required by Standard 8[2]
- Operation and Maintenance Plan required by Standard 9

In addition to all plans and supporting information, the Stormwater Report must include a brief narrative describing stormwater management practices, including environmentally sensitive site design and LID techniques, along with a diagram depicting runoff through the proposed BMP treatment train. Plans are required to show existing and proposed conditions, identify all wetland resource areas, NRCS soil types, critical areas, Land Uses with Higher Potential Pollutant Loads (LUHPPL), and any areas on the site where infiltration rate is greater than 2.4 inches per hour. The Plans shall identify the drainage areas for both existing and proposed conditions at a scale that enables verification of supporting calculations.

As noted in the Checklist, the Stormwater Management Report shall document compliance with each of the Stormwater Management Standards as provided in the Massachusetts Stormwater Handbook. The soils evaluation and calculations shall be done using the methodologies set forth in Volume 3 of the Massachusetts Stormwater Handbook.

To ensure that the Stormwater Report is complete, applicants are required to fill in the Stormwater Report Checklist by checking the box to indicate that the specified information has been included in the Stormwater Report. If any of the information specified in the checklist has not been submitted, the applicant must provide an explanation. The completed Stormwater Report Checklist and Certification must be submitted with the Stormwater Report.

[1] The Stormwater Report may also include the Illicit Discharge Compliance Statement required by Standard 10. If not included in the Stormwater Report, the Illicit Discharge Compliance Statement must be submitted prior to the discharge of stormwater runoff to the post-construction best management practices.

[2] For some complex projects, it may not be possible to include the Construction Period Erosion and Sedimentation Control Plan in the Stormwater Report. In that event, the issuing authority has the discretion to issue an Order of Conditions that approves the project and includes a condition requiring the proponent to submit the Construction Period Erosion and Sedimentation Control Plan before commencing any land disturbance activity on the site.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands Program

Checklist for Stormwater Report

B. Stormwater Checklist and Certification

The following checklist is intended to serve as a guide for applicants as to the elements that ordinarily need to be addressed in a complete Stormwater Report. The checklist is also intended to provide conservation commissions and other reviewing authorities with a summary of the components necessary for a comprehensive Stormwater Report that addresses the ten Stormwater Standards.

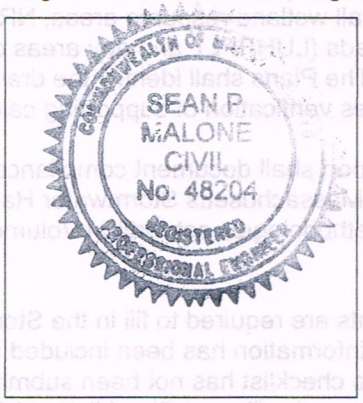
Note: Because stormwater requirements vary from project to project, it is possible that a complete Stormwater Report may not include information on some of the subjects specified in the Checklist. If it is determined that a specific item does not apply to the project under review, please note that the item is not applicable (N.A.) and provide the reasons for that determination.

A complete checklist must include the Certification set forth below signed by the Registered Professional Engineer who prepared the Stormwater Report.

Registered Professional Engineer's Certification

I have reviewed the Stormwater Report, including the soil evaluation, computations, Long-term Pollution Prevention Plan, the Construction Period Erosion and Sedimentation Control Plan (if included), the Long-term Post-Construction Operation and Maintenance Plan, the Illicit Discharge Compliance Statement (if included) and the plans showing the stormwater management system, and have determined that they have been prepared in accordance with the requirements of the Stormwater Management Standards as further elaborated by the Massachusetts Stormwater Handbook. I have also determined that the information presented in the Stormwater Checklist is accurate and that the information presented in the Stormwater Report accurately reflects conditions at the site as of the date of this permit application.

Registered Professional Engineer Block and Signature



12-6-15

Signature and Date

Checklist

Project Type: Is the application for new development, redevelopment, or a mix of new and redevelopment?

☒ New development

☐ Redevelopment

☐ Mix of New Development and Redevelopment

Checklist for Stormwater Report

Checklist (continued)

LID Measures: Stormwater Standards require LID measures to be considered. Document what environmentally sensitive design and LID Techniques were considered during the planning and design of the project:

☒ No disturbance to any Wetland Resource Areas

☒ Site Design Practices (e.g. clustered development, reduced frontage setbacks)

☐ Reduced Impervious Area (Redevelopment Only)

☒ Minimizing disturbance to existing trees and shrubs

☐ LID Site Design Credit Requested:

- ☐ Credit 1
- ☐ Credit 2
- ☐ Credit 3

☒ Use of "country drainage" versus curb and gutter conveyance and pipe

☐ Bioretention Cells (includes Rain Gardens)

☐ Constructed Stormwater Wetlands (includes Gravel Wetlands designs)

☐ Treebox Filter

☒ Water Quality Swale

☐ Grass Channel

☐ Green Roof

☒ Other (describe): Infiltration basins

Standard 1: No New Untreated Discharges

☒ No new untreated discharges

☒ Outlets have been designed so there is no erosion or scour to wetlands and waters of the Commonwealth

☒ Supporting calculations specified in Volume 3 of the Massachusetts Stormwater Handbook included.

Checklist for Stormwater Report

Checklist (continued)

Standard 2: Peak Rate Attenuation

☐ Standard 2 waiver requested because the project is located in land subject to coastal storm flowage and stormwater discharge is to a wetland subject to coastal flooding.

☐ Evaluation provided to determine whether off-site flooding increases during the 100-year 24-hour storm.

☒ Calculations provided to show that post-development peak discharge rates do not exceed pre-development rates for the 2-year and 10-year 24-hour storms. If evaluation shows that off-site flooding increases during the 100-year 24-hour storm, calculations are also provided to show that post-development peak discharge rates do not exceed pre-development rates for the 100-year 24-hour storm.

Standard 3: Recharge

☒ Soil Analysis provided.

☒ Required Recharge Volume calculation provided.

☒ Required Recharge volume reduced through use of the LID site Design Credits.

☒ Sizing the infiltration, BMPs is based on the following method: Check the method used.

☒ Static ☐ Simple Dynamic ☐ Dynamic Field[1]

☐ Runoff from all impervious areas at the site discharging to the infiltration BMP.

☒ Runoff from all impervious areas at the site is *not* discharging to the infiltration BMP and calculations are provided showing that the drainage area contributing runoff to the infiltration BMPs is sufficient to generate the required recharge volume.

☒ Recharge BMPs have been sized to infiltrate the Required Recharge Volume.

☐ Recharge BMPs have been sized to infiltrate the Required Recharge Volume *only* to the maximum extent practicable for the following reason:

- ☐ Site is comprised solely of C and D soils and/or bedrock at the land surface
- ☐ M.G.L. c. 21E sites pursuant to 310 CMR 40.0000
- ☐ Solid Waste Landfill pursuant to 310 CMR 19.000
- ☐ Project is otherwise subject to Stormwater Management Standards only to the maximum extent practicable.

☒ Calculations showing that the infiltration BMPs will drain in 72 hours are provided.

☐ Property includes a M.G.L. c. 21E site or a solid waste landfill and a mounding analysis is included.

[1] 80% TSS removal is required prior to discharge to infiltration BMP if Dynamic Field method is used.

Checklist for Stormwater Report

Checklist (continued)

Standard 3: Recharge (continued)

☐ The infiltration BMP is used to attenuate peak flows during storms greater than or equal to the 10-year 24-hour storm and separation to seasonal high groundwater is less than 4 feet and a mounding analysis is provided.

☐ Documentation is provided showing that infiltration BMPs do not adversely impact nearby wetland resource areas.

Standard 4: Water Quality

The Long-Term Pollution Prevention Plan typically includes the following:

- Good housekeeping practices;
- Provisions for storing materials and waste products inside or under cover;
- Vehicle washing controls;
- Requirements for routine inspections and maintenance of stormwater BMPs;
- Spill prevention and response plans;
- Provisions for maintenance of lawns, gardens, and other landscaped areas;
- Requirements for storage and use of fertilizers, herbicides, and pesticides;
- Pet waste management provisions;
- Provisions for operation and management of septic systems;
- Provisions for solid waste management;
- Snow disposal and plowing plans relative to Wetland Resource Areas;
- Winter Road Salt and/or Sand Use and Storage restrictions;
- Street sweeping schedules;
- Provisions for prevention of illicit discharges to the stormwater management system;
- Documentation that Stormwater BMPs are designed to provide for shutdown and containment in the event of a spill or discharges to or near critical areas or from LUHPPL;
- Training for staff or personnel involved with implementing Long-Term Pollution Prevention Plan;
- List of Emergency contacts for implementing Long-Term Pollution Prevention Plan.

☒ A Long-Term Pollution Prevention Plan is attached to Stormwater Report and is included as an attachment to the Wetlands Notice of Intent.

☐ Treatment BMPs subject to the 44% TSS removal pretreatment requirement and the one inch rule for calculating the water quality volume are included, and discharge:

- ☐ is within the Zone II or Interim Wellhead Protection Area
- ☐ is near or to other critical areas
- ☐ is within soils with a rapid infiltration rate (greater than 2.4 inches per hour)
- ☐ involves runoff from land uses with higher potential pollutant loads.

☐ The Required Water Quality Volume is reduced through use of the LID site Design Credits.

☒ Calculations documenting that the treatment train meets the 80% TSS removal requirement and, if applicable, the 44% TSS removal pretreatment requirement, are provided.

Checklist for Stormwater Report

Checklist (continued)

Standard 4: Water Quality (continued)

☐ The BMP is sized (and calculations provided) based on:

☒ The ½" or 1" Water Quality Volume or

☐ The equivalent flow rate associated with the Water Quality Volume and documentation is provided showing that the BMP treats the required water quality volume.

☒ The applicant proposes to use proprietary BMPs, and documentation supporting use of proprietary BMP and proposed TSS removal rate is provided. This documentation may be in the form of the propriety BMP checklist found in Volume 2, Chapter 4 of the Massachusetts Stormwater Handbook and submitting copies of the TARP Report, STEP Report, and/or other third party studies verifying performance of the proprietary BMPs.

☐ A TMDL exists that indicates a need to reduce pollutants other than TSS and documentation showing that the BMPs selected are consistent with the TMDL is provided.

Standard 5: Land Uses With Higher Potential Pollutant Loads (LUHPPLs)

☐ The NPDES Multi-Sector General Permit covers the land use and the Stormwater Pollution Prevention Plan (SWPPP) has been included with the Stormwater Report.

☐ The NPDES Multi-Sector General Permit covers the land use and the SWPPP will be submitted ***prior to*** the discharge of stormwater to the post-construction stormwater BMPs.

☐ The NPDES Multi-Sector General Permit does ***not*** cover the land use.

☐ LUHPPLs are located at the site and industry specific source control and pollution prevention measures have been proposed to reduce or eliminate the exposure of LUHPPLs to rain, snow, snow melt and runoff, and been included in the long term Pollution Prevention Plan.

☐ All exposure has been eliminated.

☐ All exposure has ***not*** been eliminated and all BMPs selected are on MassDEP LUHPPL list.

☐ The LUHPPL has the potential to generate runoff with moderate to higher concentrations of oil and grease (e.g. all parking lots with >1000 vehicle trips per day) and the treatment train includes an oil grit separator, a filtering bioretention area, a sand filter or equivalent.

Standard 6: Critical Areas

☐ The discharge is near or to a critical area and the treatment train includes only BMPs that MassDEP has approved for stormwater discharges to or near that particular class of critical area.

☐ Critical areas and BMPs are identified in the Stormwater Report.

Checklist for Stormwater Report

Checklist (continued)

Standard 7: Redevelopments and Other Projects Subject to the Standards only to the maximum extent practicable

☐ The project is subject to the Stormwater Management Standards only to the maximum Extent Practicable as a:

- ☐ Limited Project
- ☐ Small Residential Projects: 5-9 single family houses or 5-9 units in a multi-family development provided there is no discharge that may potentially affect a critical area.
- ☐ Small Residential Projects: 2-4 single family houses or 2-4 units in a multi-family development with a discharge to a critical area
- ☐ Marina and/or boatyard provided the hull painting, service and maintenance areas are protected from exposure to rain, snow, snow melt and runoff
- ☐ Bike Path and/or Foot Path
- ☒ Redevelopment Project
- ☐ Redevelopment portion of mix of new and redevelopment.

☐ Certain standards are not fully met (Standard No. 1, 8, 9, and 10 must always be fully met) and an explanation of why these standards are not met is contained in the Stormwater Report.

☐ The project involves redevelopment and a description of all measures that have been taken to improve existing conditions is provided in the Stormwater Report. The redevelopment checklist found in Volume 2 Chapter 3 of the Massachusetts Stormwater Handbook may be used to document that the proposed stormwater management system (a) complies with Standards 2, 3 and the pretreatment and structural BMP requirements of Standards 4-6 to the maximum extent practicable and (b) improves existing conditions.

Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control

A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan must include the following information:

- Narrative;
- Construction Period Operation and Maintenance Plan;
- Names of Persons or Entity Responsible for Plan Compliance;
- Construction Period Pollution Prevention Measures;
- Erosion and Sedimentation Control Plan Drawings;
- Detail drawings and specifications for erosion control BMPs, including sizing calculations;
- Vegetation Planning;
- Site Development Plan;
- Construction Sequencing Plan;
- Sequencing of Erosion and Sedimentation Controls;
- Operation and Maintenance of Erosion and Sedimentation Controls;
- Inspection Schedule;
- Maintenance Schedule;
- Inspection and Maintenance Log Form.

☒ A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan containing the information set forth above has been included in the Stormwater Report.

Checklist for Stormwater Report

Checklist (continued)

Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control (continued)

☐ The project is highly complex and information is included in the Stormwater Report that explains why it is not possible to submit the Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan with the application. A Construction Period Pollution Prevention and Erosion and Sedimentation Control has ***not*** been included in the Stormwater Report but will be submitted ***before*** land disturbance begins.

☐ The project is ***not*** covered by a NPDES Construction General Permit.

☐ The project is covered by a NPDES Construction General Permit and a copy of the SWPPP is in the Stormwater Report.

☒ The project is covered by a NPDES Construction General Permit but no SWPPP been submitted. The SWPPP will be submitted BEFORE land disturbance begins.

Standard 9: Operation and Maintenance Plan

☒ The Post Construction Operation and Maintenance Plan is included in the Stormwater Report and includes the following information:

- ☒ Name of the stormwater management system owners;
- ☒ Party responsible for operation and maintenance;
- ☒ Schedule for implementation of routine and non-routine maintenance tasks;
- ☒ Plan showing the location of all stormwater BMPs maintenance access areas;
- ☐ Description and delineation of public safety features;
- ☐ Estimated operation and maintenance budget; and
- ☒ Operation and Maintenance Log Form.

☐ The responsible party is ***not*** the owner of the parcel where the BMP is located and the Stormwater Report includes the following submissions:

- ☐ A copy of the legal instrument (deed, homeowner's association, utility trust or other legal entity) that establishes the terms of and legal responsibility for the operation and maintenance of the project site stormwater BMPs;
- ☐ A plan and easement deed that allows site access for the legal entity to operate and maintain BMP functions.

Standard 10: Prohibition of Illicit Discharges

☐ The Long-Term Pollution Prevention Plan includes measures to prevent illicit discharges;

☐ An Illicit Discharge Compliance Statement is attached;

☒ NO Illicit Discharge Compliance Statement is attached but will be submitted ***prior to*** the discharge of any stormwater to post-construction BMPs.

Project 13005 Paradise Valley Club
By SPM Treatment Calcs
Date 10/29/2015

Small Pod

	Total	Impervious A	Impervious B	Impervious C	Impervious D	Water Quality (.5")	Infiltration Storage	Treatment Train TSS Remaining: CB (25%)	Infiltration (80%)	Stormwater Unit (80%)	Filter Strip (45%)	Total Removal
Storwater Unit 1												
Post 1c	8,643	1,896	6,747	-	-	360		0.75	0.75	0.15	0.08	92%
Post 1d	8,124	3,066	5,058	-	-	339	1,116	1.00	0.20	0.04	0.02	98%
Stormwater Unit 2												
Post 1e	7,224	2,800	4,424	-	-	301		0.75	0.75	0.15	0.08	92%
Post 1f	8,315	2,113	6,061	-	141	346	1,521	1.00	0.20	0.04	0.02	98%
Stormwater Unit 2												
Post 2d	10,659	-	3,797	-	6,862	444		0.75	0.75	0.15	0.08	92%
Post 2e	12,377	-	2,740	-	9,637	516		1.00	1.00	0.20	0.11	89%
							-					
Stormwater Unit 2												
Post 1g	16,718	-	10,112	-	6,606	697	-	0.75	0.75	0.15	0.08	92%
Post 1h	13,189	-	9,536	-	3,653	550	1,440	1.00	0.20	0.04	0.02	98%
Pipe Infiltration												
Post 1B	2,929	-	2,929	-	-	122	-					
Post 2b	30,684	-	30,684	-	-	1,279						
Post 2c	5,166	-	5,166	-	-	215	-					
						1,616	10,482	0.75	0.15	0.15	0.08	92%

Project	13005	Paradise Valley Club
By	SPM	Basin Sizing Analysis
Date	10/29/2015	

Watershed	Bottom Elev	Bottom Area	Top Elev	Top Area	Storage CF	Outlet	WQ Storage CF	Ponding Depth
Basin 1	266.00	358	268.40	1,873	2,677	267.00	1,115.50	1.00
Basin 2	268.00	660	270.00	2,382	3,042	269.00	1,521.00	1.00
Basin 3	268.00	309	269.50	1,202	1,133	268.00	-	-
Basin 4	268.00	746	271.00	5,014	8,640	268.50	1,440.00	0.50
Pipe Infiltration	270.00		273.00		10,482	273.00	10,482.00	3.00

Project	13005	Paradise Valley Club
By	SPM	Outlet Protection Sizing
Date	10/29/2015	

	Outlet	TW	Q (25-yr) ((	Do(ft)	W1 (ft)	W2 (ft)	L(ft)	D50 (in)
DMH P6	FES 1	0.1	2.49	1.25	3.75	8.21	11.14	2
DMH P4	FES 2	0.1	1.64	1	3	6.59	8.97	1
DMH P5	FES 3	0.1	1.44	1	3	6.49	8.73	1
BASIN 4	FES 4	0.5	5.35	1	3	10.08	17.70	1
Stormceptc	FES 5	0.1	4.56	1	3	7.99	12.47	5

*Presumed flow added based on existing off-site culvert flowing full

Formulas:

L	L=1.8Q/Do1.5 + 7Do	(when TW<Do/2)
	L=3Q/Do1.5 + 7Do	(when TW>Do/2)
W1	W=3Do	
W2	W=3Do + L	(when TW<Do/2)
	W=3Do + 0.4L	(when TW>Do/2)
D50	D50=(.02Q^1.3)/(TW*Do)	

Gmail by Google

Sean Malone <smalone.ocg@gmail.com>

Contact Info - John Czach, Regional Engineer - Rinker Materials

John F Czach <johnf.czach@cemex.com> Fri, May 1, 2015 at 12:00 PM
To: Sean Malone <smalone.ocg@gmail.com>

Hi Sean.

Attached is a Stormceptor sizing table based on water quality flow (WQF), as requested. Base on your project parameters provided below, a Stormceptor Model STC450 is estimated to remove 80% of the average annual TSS based on a WQF of 0.40 cfs.

I will call to discuss further.

Thanks,
John F. Czach, P.E.
Regional Engineer - New England Region
Rinker Materials - Concrete Pipe Division
Office : (413) 562-3647 Fax: (413) 562-7010 Cell: 413-246-7144
Address: 69 Neck Road, Westfield, MA 01085
e-Mail: johnf.czach@cemex.com
www.rinkerstormceptor.com

From: Sean Malone <smalone.ocg@gmail.com>
To: John F Czach/US/Cemex@CEMEX
Date: 05/01/2015 09:44 AM
Subject: Re: Contact Info - John Czach, Regional Engineer - Rinker Materials

Hi John,
Sorry for the delay getting back to you. I recently revised the plan for the Inly School in Scituate we spoke about. I need the sizing and back up for the peer reviewer for a unit to treat an 12,000 sf subcatchment with 1,712 sf impervious for a treatment flow rate of 0.39cfs.

Let me know if you need anything else from me.
Thanks,
Sean

On Thu, Apr 23, 2015 at 4:20 PM, John F Czach <johnf.czach@cemex.com> wrote:
Hi Sean.

It was a pleasure speaking with you earlier today. Below is my contact information for future reference. I also attached MADEP's guidance on calculating water quality flow for sizing of proprietary stormwater treatment technologies.

Give me a call when you are back in the office and we can discuss further.

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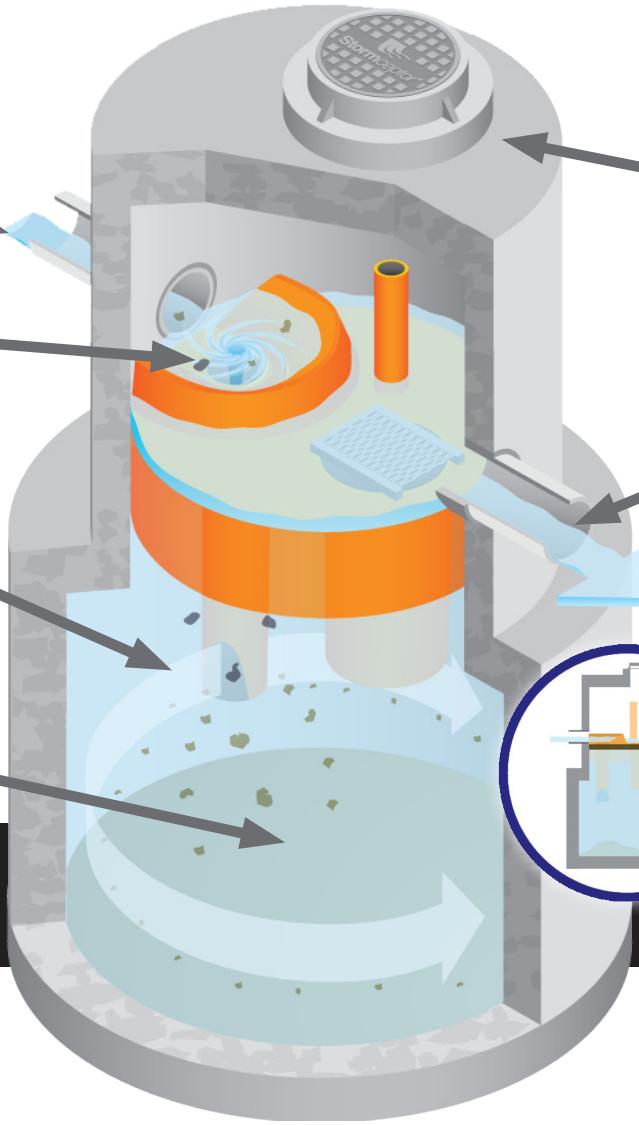

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Stormceptor® STC

Stormceptor® is an underground stormwater quality treatment device that is unparalleled in its effectiveness for pollutant capture and retention. With thousands of systems operating worldwide, Stormceptor delivers protection every day in every storm.

With patented technology, optimal treatment occurs by allowing free oil to rise and sediment to settle. The Stormceptor design prohibits scour and release of previously captured pollutants, ensuring superior treatment and protection during even the most extreme storm events.

Stormceptor is very easy to design and provides flexibility under varying site constraints such as tight right-of-ways, zero lot lines and retrofit projects. Design flexibility allows for a cost-effective approach to stormwater treatment. Stormceptor has proven performance backed by the longest record of lab and field verification in the industry.

Tested Performance

- Fine particle capture
- Prevents scour or release
- 95%+ Oil removal

Massachusetts – Water Quality (Q) Flow Rate

Stormceptor STC Model	Inside Diameter	Typical Depth Below Inlet Pipe Invert [1]	Water Quality Flow Rate Q [2]	Peak Conveyance Flow Rate [3]	Hydrocarbon Capacity [4]	Maximum Sediment Capacity [4]
	(ft)	(in)	(cfs)	(cfs)	(Gallons)	(ft^3)
STC 450i	4	68	0.40	5.5	86	46
STC 900	6	63	0.89	22	251	89
STC 2400	8	104	1.58	22	840	205
STC 4800	10	140	2.47	22	909	543
STC 7200	12	148	3.56	22	1,059	839
STC 11000	2 x 10	142	4.94	48	2,792	1,086
STC 16000	2 x 12	148	7.12	48	3,055	1,677

[1] Depth Below Pipe Inlet Invert to the Bottom of Base Slab, and Maximum Sediment Capacity can vary to accommodate specific site designs and pollutant loads. Depths can vary to accommodate special designs or site conditions. Contact your local representative for assistance.
[2] Water Quality Flow Rate (Q) is based on 80% annual average TSS removal of the OK110 particle size distribution.
[3] Peak Conveyance Flow Rate is based upon ideal velocity of 3 feet per second and outlet pipe diameters of 18-inch, 36-inch, and 54-inch diameters.
[4] Hydrocarbon & Sediment capacities can be modified to accommodate specific site design requirements, contact your local representative for assistance.

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APPENDIX D

Pollution Prevention and
Stormwater Operation and Maintenance Plan

Paradise Valley Club
Grove Street
Framingham, Massachusetts

Oak Consulting Group
Project 13005

Pollution Prevention and Stormwater Operation and Maintenance Plan

For

Paradise Valley Club

Grove Street
Framingham, Massachusetts

Prepared by:

OCG
Oak Consulting Group

P.O. Box 1123
Newburyport, Massachusetts
(978) 312-3120

TABLE OF CONTENTS

APPENDICES:

1.0 INTRODUCTION

This Pollution Prevention and Operation and Maintenance (O&M) Plan has been prepared to implement procedures for the Paradise Valley Club (Project) which will minimize the potential for stormwater pollution and adverse impacts to resource areas subject to protection under the Massachusetts Wetlands Protections Act and Town of Framingham Wetlands Bylaw. This plan has been prepared to identify pollution prevention measures which are implemented as part of daily operations as well as O&M practices and procedures for stormwater Best Management Practices (BMPs).

The Project encompasses approximately 46 acres located between Grove Street and Winch Street in Framingham, Massachusetts. Wetlands resource areas associated with Baiting Brook include bordering vegetated wetlands (BVW), flood plain, and riverfront area. Additionally a man-made pond is located near the center of the site and BVW is found along the southern portion of the site. A plan showing the configuration of the Project stormwater systems and wetlands resource areas is provided on Sheets C-301 C-302, and C-303, Grading, Drainage & Erosion Control Plan. Inspection forms for Stormwater BMPs are enclosed in Appendix A.

1.1 Roles and Responsibilities

Owner

Paradise Valley Club (The Association)

Implementation

The Association

This plan shall be maintained by the Association and distributed to all residents, homeowners and outside contractors on an annual basis.

2.0 POLLUTION PREVENTION

The following section presents methods and procedures implemented by the Project as part of daily operations to minimize potential stormwater pollution. The procedures presented below have been developed to be practical to implement and sufficiently protective of nearby resource areas and the environment in general.

2.1 Equipment and Material Storage

Seasonal equipment is not to be permanently stored on-site. This equipment is generally limited to snow plows, lawn mowers and other miscellaneous equipment used by the personnel or companies conducting routine maintenance at the Project. Equipment used at the Project shall be generally clean and free of oil leaks and/or hazardous material which could potentially impact storm water quality.

Supplies such as sand, grass seed, fertilizers, and other materials which may be affected by weather or become airborne shall not be stored on site unless they are stored indoors.

2.2 Fuel Storage

There is no proposed fuel storage at the Project. Any fueling on site of maintenance equipment shall be conducted on paved areas at least 100' away from any resource area.

2.3 Trash and Recyclables Collection

Trash and recyclables will be picked up from the Project on a routine basis by an outside, licensed hauler. Trash and recyclable containers shall be kept under cover until they are brought by the homeowner to the curb side for pickup. Trash and recyclable containers may not be brought to the curbside more than 24 hours prior to the scheduled pickup.

2.4 General Housekeeping

Cleanup to remove accumulated trash and debris shall be performed on both an as-needed and scheduled basis. Routine cleanup activities include the following:

2.4.1 Trash and Debris Pickup

Trash and debris pickup shall be performed continuously as needed. Landscape and maintenance contractors shall be responsible for removing litter from the grounds. Residents and guests are prohibited from littering and are encouraged to pickup miscellaneous debris which they may encounter.

2.4.2 Sweeping

Sweeping of roadways and parking areas shall be performed on an annual basis during the early spring to remove salt and sand applied to these surfaces during the winter months. Should the need arise; selected areas of the Project may be swept more frequently. Sweeping will be performed by an outside contractor using suitable equipment. Recovered sweepings shall be disposed with other yard waste off-site in accordance with all applicable state, local and federal laws.

2.4.3 Spring and Fall Cleanup

Spring and fall cleanups shall be performed once per year following snow melt and tree defoliation, respectively. The majority of the spring and fall cleanup efforts shall focus on landscaped and lawn areas throughout the Project. Yard waste, including leaves, grass cuttings, nuisance vegetation, branches, stumps, rocks, etc., shall be disposed of off-site in accordance with all applicable state, local and federal laws.

2.5 Snow Plowing/Deicing

Snow and ice removal operations shall be performed on an as-needed basis. Snow from driveways, parking areas and walkways shall be plowed to the sides of the paved surfaces in accordance with customary snow plowing procedures. Snow shall be plowed away from wetlands resource areas. Snow stockpiles shall be located beyond wetlands buffer zones to the greatest extent practicable and in designated locations throughout the Project. Snow banks or piles may be removed from parking lots or other critical areas as needed. Snow which may be removed in this manner shall be disposed of off-site in accordance with applicable state, local and federal laws. Snow shall not be dumped or pushed into the pond or resource areas.

Deicing operations consist of applying sand or salt to walkways and other paved surfaces as needed for vehicle and pedestrian safety. Salt shall be applied at the minimal acceptable rates to provide safe vehicle and pedestrian safety.

2.6 Landscape Maintenance

Lawn and landscape areas shall be regularly maintained by a qualified landscape contractor. The landscape contractor shall be responsible for the maintenance and upkeep of the stormwater Basins including by not limited to replacement of dead or dying vegetation, removal of sediment and replacement of mulch.

The use of fertilizers, pesticides, and herbicides shall be minimized and in not case shall they be used within 100’ of a wetland resource area.

3.0 OPERATION AND MAINTENANCE

An outside contractor shall inspect the stormwater management systems on a routine basis. Refer to the Grading, Drainage & Erosion Control Plans (Plans) for drainage structure locations. Inspection and maintenance shall be performed as follows:

3.1 Catch Basins and Manholes

Catch basins and manholes shall be inspected for accumulation of silt, sediment, or debris on a semi-annual basis. Cleaning will be performed at least once per year or more frequently if the sediment level rises 2 feet above the bottom of the sump. Removed sediment will be disposed off site by a qualified waste disposal contractor in accordance with local, state and federal regulations.

3.2 Stormwater Basins

Stormwater basins consist of sedimentation and infiltration basins. The basins will be inspected for sediment and debris accumulation on regular basis. Vegetation will also be inspected and mowed or replaced as needed. The maintenance schedule for stormwater basins is as follows:

Activity	**Time of Year**	**Frequency**
Inspect and Remove Trash	Year round	Biannually
Mulch	Spring	Biannually
Mow	Fall	Annually
Replace Dead Vegetation	Spring	Annually
Prune	Spring	Annually
Repair areas of erosion and revegetate	Spring	As necessary, but not less than once a year.
Remove sediment from grass swale	Spring	Annually
Inspect basin to ensure it is operating as designed	Summer	First few months after construction and semi-annually thereafter
Remove sediment from basin	Spring	As necessary

3.3 Record Keeping

The Association shall complete the Stormwater System Inspection Report (Appendix A) as part of routine inspections. Copies of completed reports shall be kept for at least 5 years. Receipts of catch basin cleaning and other O&M activities which require contracted services shall also kept on file for a minimum of 5 years.

3.4 Pet Waste

Owners and guests will be responsible for clean up and disposal of pet waste on the site.

APPENDIX A

Stormwater System O&M Inspection Report

Paradise Valley Club

STORMWATER MANAGEMENT
OPERATIONS AND MAINTENANCE PLAN

Paradise Valley Club
Grove Street
Framingham, Massachusetts

The following Stormwater Management Operation and Maintenance (O&M) Plan has been prepared to operate and maintain the stormwater management system for the Paradise Valley Club. The association shall be responsible for maintenance of all BMP's and drainage structures on-site.

Owner/Operator: The Paradise Valley Club

Inspection and Maintenance Schedule

Facility personnel will inspect the stormwater management system on a routine basis not less than once per month for the first 6 months of operation and annually thereafter. Refer to Sheets C-301, C-302 and C-303, Grading, Drainage & Erosion Control Plan, for drainage structure locations. Inspection and maintenance shall be performed as follows:

1. Catchbasins and Manholes shall be inspected for accumulation of silt, sediment, or debris on a semi-annual basis. Cleaning will be performed whenever the sediment level rises to within 1 foot of the invert elevation of the outlet pipe. Removed sediment will be disposed off-site by a qualified waste disposal contractor in accordance with state and federal regulations.

2. Stormwater Treatment Unit shall be visually inspected annually and be cleaned out per the manufacturer's recommendations. Removed sediment will be disposed of off-site by a qualified waste disposal contractor in accordance with state and federal regulations.

3. Landscaped Areas shall be inspected and maintained on a regular basis. Areas which may be subject to erosion will be stabilized and reseeded immediately. These operations will be performed as part of ongoing routine grounds maintenance operations.

4. Infiltration Areas shall be visually inspected monthly and voids in soil or stone shall be repaired. Vegetation shall be inspected monthly for disease or pest problems. If treatment is warranted, use the least toxic approach. Promptly replace any vegetation that is beyond treatment. Infiltration areas shall be mowed at least four times a year as required.

5. Drain outfalls shall be inspected annually. Any signs of erosion shall be promptly repaired. Level spreaders and berm outlets shall be inspected for erosion and for good vegetated growth. Rip-rap aprons shall be inspected to ensure the aprons are in good order with no erosion. Rip-rap shall be repaired or replaced as required.

Stormwater System Inspection Report

General Information			
Location: Paradise Valley Club			
Date of Inspection		**Start/End Time**	
Inspector's Name(s)			
Inspector's Title(s)			
Inspector's Contact Information			
Purpose of Inspection			
Weather Information			
Has it rained since the last inspection? ❑Yes ❑No			
Weather at time of this inspection?			

Site-Specific Stormwater Devices

	Description	Installed and Operating Properly?	Corrective Action Needed	Date for Corrective Action/Responsible Person
1		❑Yes ❑No		
2		❑Yes ❑No		
3		❑Yes ❑No		
4		❑Yes ❑No		
5		❑Yes ❑No		
6		❑Yes ❑No		
7		❑Yes ❑No		
8		❑Yes ❑No		
9		❑Yes ❑No		

	Description	Installed and Operating Properly?	Corrective Action Needed	Date for Corrective Action/Responsible Person
10		❑Yes ❑No		
11		❑Yes ❑No		
12		❑Yes ❑No		
13		❑Yes ❑No		
14		❑Yes ❑No		
15		❑Yes ❑No		
16		❑Yes ❑No		
17		❑Yes ❑No		
18		❑Yes ❑No		
19		❑Yes ❑No		
20		❑Yes ❑No		

Overall Site Issues

	Description		Corrective Action	Date for Corrective Action/Responsible Person
1	Are all slopes properly stabilized?	❑Yes ❑No		
2	Are natural resource areas (e.g., streams, wetlands, etc.) being subjected to erosion?	❑Yes ❑No		
3	Are discharge points free of sediment deposits?	❑Yes ❑No		

Certification Statement:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Print name: _____

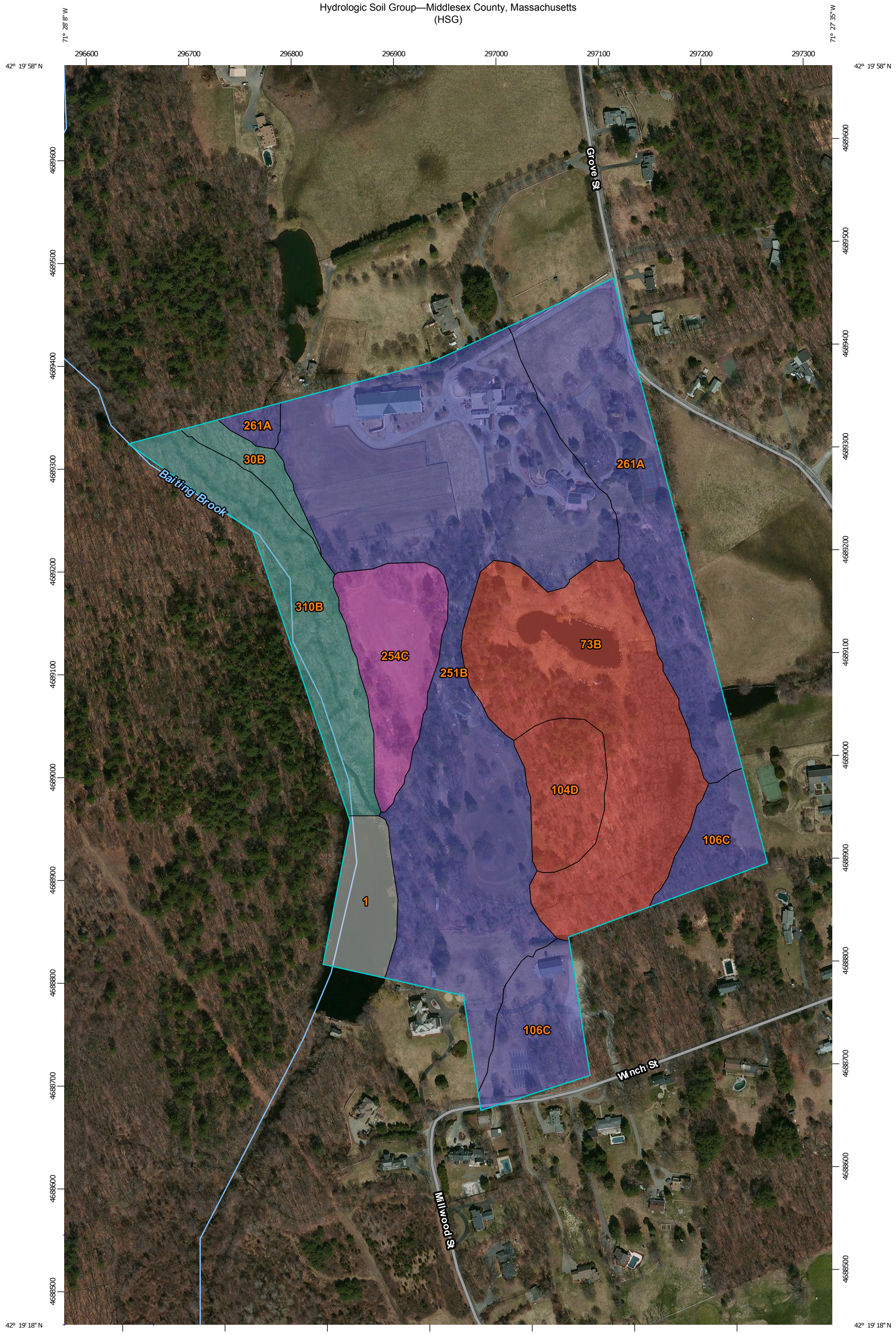
Signature: _____ Date: _____

APPENDIX E

Soils Information

Paradise Valley Club
Grove Street
Framingham, Massachusetts

Hydrologic Soil Group—Middlesex County, Massachusetts
(HSG)



Map Scale: 1:3,430 if printed on B portrait (11" x 17") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

A
A/D
B
B/D
C
C/D
D
Not rated or not available

Soil Rating Lines

A
A/D
B
B/D
C
C/D
D
Not rated or not available

Soil Rating Points

A
A/D
B
B/D
C
C/D
D
Not rated or not available

Water Features

Streams and Canals

Transportation

Rails
Interstate Highways
US Routes
Major Roads
Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:25,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Middlesex County, Massachusetts
Survey Area Data: Version 13, Dec 17, 2013

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 30, 2011—May 1, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Hydrologic Soil Group— Summary by Map Unit — Middlesex County, Massachusetts (MA017)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
1	Water		2.1	3.3%
30B	Raynham silt loam, 0 to 5 percent slopes	C	0.9	1.4%
73B	Whitman fine sandy loam, 0 to 5 percent slopes, extremely stony	D	11.5	18.3%
104D	Hollis-Rock outcrop-Charlton complex, 15 to 25 percent slopes	D	2.5	4.0%
106C	Narragansett-Hollis-Rock outcrop complex, 3 to 15 percent slopes	B	4.6	7.3%
251B	Haven silt loam, 3 to 8 percent slopes	B	23.5	37.5%
254C	Merrimac fine sandy loam, 8 to 15 percent slopes	A	3.9	6.2%
261A	Tisbury silt loam, 0 to 3 percent slopes	B	8.6	13.7%
310B	Woodbridge fine sandy loam, 3 to 8 percent slopes	C	5.2	8.3%
Totals for Area of Interest			**62.7**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Depth to Water Table—Middlesex County, Massachusetts
(ESHWT)

71° 28' 8" W
71° 27' 35" W
42° 19' 58" N
42° 19' 18" N

296600 296700 296800 296900 297000 297100 297200 297300

4689600 4689500 4689400 4689300 4689200 4689100 4689000 4688900 4688800 4688700 4688600 4688500

Grove St
Baiting Brook
Winch St
Millwood St

261A
30B
261A
310B
254C
251B
73B
104D
106C
1
106C

Map Scale: 1:3,430 if printed on B portrait (11" x 17") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- 0 - 25
- 25 - 50
- 50 - 100
- 100 - 150
- 150 - 200
- > 200
- Not rated or not available

Soil Rating Lines
- 0 - 25
- 25 - 50
- 50 - 100
- 100 - 150
- 150 - 200
- > 200
- Not rated or not available

Soil Rating Points
- 0 - 25
- 25 - 50
- 50 - 100
- 100 - 150
- 150 - 200
- > 200
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

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Depth to Water Table

Depth to Water Table— Summary by Map Unit — Middlesex County, Massachusetts (MA017)				
Map unit symbol	**Map unit name**	**Rating (centimeters)**	**Acres in AOI**	**Percent of AOI**
1	Water	>200	2.1	3.3%
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73B	Whitman fine sandy loam, 0 to 5 percent slopes, extremely stony	0	11.5	18.3%
104D	Hollis-Rock outcrop-Charlton complex, 15 to 25 percent slopes	>200	2.5	4.0%
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251B	Haven silt loam, 3 to 8 percent slopes	>200	23.5	37.5%
254C	Merrimac fine sandy loam, 8 to 15 percent slopes	>200	3.9	6.2%
261A	Tisbury silt loam, 0 to 3 percent slopes	61	8.6	13.7%
310B	Woodbridge fine sandy loam, 3 to 8 percent slopes	50	5.2	8.3%
Totals for Area of Interest			**62.7**	**100.0%**

Description

"Water table" refers to a saturated zone in the soil. It occurs during specified months. Estimates of the upper limit are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

This attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

Rating Options

Units of Measure: centimeters

Aggregation Method: Dominant Component